FIRST

MEDICAL AND SURGICAL REPORT

OF THE

BOSTON CITY HOSPITAL.

EDITED BY

J. NELSON BORLAND,
PHYSICIAN.

DAVID W. CHEEVER,
SURGEON.

83789
1910

BOSTON:
LITTLE, BROWN, AND COMPANY.
1870.

Entered according to the Act of Congress, in the year 1870, by the
Board of Trustees of the Boston City Hospital,
in the office of the Librarian of Congress at Washington.

Printed by
ALFRED MUDGE & SON,
34 School Street, Boston.

DEDICATED

TO THE

MEMORY

OF THE

DECEASED MEMBERS

OF THE

HOSPITAL STAFF.

PREFACE.

On the completion of the fifth year of the City Hospital's establishment, its Trustees desired the Medical Staff to prepare an enlarged and consolidated report, which might be of general interest to the Medical profession.

The duty of editing it has been entrusted to the undersigned, a committee of the Hospital Staff.

They have endeavored to edit it in such a manner that all the Departments of the Hospital might be represented; and that a nucleus of all facts and statistics might be so tabulated, that it could readily be enlarged in future volumes, as the Hospital increases.

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Boston, 1869.

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HISTORY AND DESCRIPTION

OF THE

CITY HOSPITAL.

Although the present volume is devoted more particularly to purely professional subjects, yet as it is the first of its kind issued by a new institution, a brief history and description of the Hospital may not be deemed inappropriate.

As early as the year 1849 the expediency of establishing a City Hospital was mooted, but no decided steps were taken till the year 1856, when petitions were signed generally by the medical faculty and officers of the local charitable associations, urging the city to establish a Hospital. These papers were communicated to the City Council of 1857 by Hon. Alexander H. Rice, then Mayor, who strongly urged the "need of a free Hospital within the limits of the city," for the reception of those plunged into poverty by sickness or sudden reverses, who ought not to be sent to the almshouse, and for the destitute stranger and others requiring temporary relief and care. The language used by Mayor Rice would seem to convey the idea of establishing a purely "free" Hospital, and as that epithet was so often applied to the projected institution, and has been even to the one now in operation, it may be well to quote from the able report made by the special Committee on that portion of Mayor Rice's remarks in which he alludes

to the character desirable for a City Hospital, especially as they coincide with the present actual regulations of the Institution: —

". . . . With this explanation of the course adopted by the Committee, we will first consider the object of the proposed Hospital. This can only be stated in general terms, because its arrangements, extent, and details, must necessarily be modified according to circumstances. It is, however, proper to state that the term 'City Hospital' would probably better express the character and design of the proposed institution than 'Free Hospital'; since it appears, from the address of the Mayor, and from the general evidence in favor of this establishment, that while its benefits are intended to be free to those persons of temperate and industrious habits, who, by sickness or accident, require that care and attention for which they are unable to pay, yet where there is the ability, there is no reason why a just and proper amount should not be received, to aid in meeting the expenses of the Hospital. And we have no doubt that many of the patients, or their friends, would prefer to pay something, in proportion to their means, to prevent the feeling that they were the objects of public charity. There is no class in the community in which this sentiment or desire of independence is so strong as among that class for whose special benefit this Hospital is intended; and it is one which, as the great barrier to pauperism, cannot be too highly commended and encouraged.

"Hence we would not have this a hospital for the reception of the degraded victims of vice and intemperance, or a home for the hopeless pauper; but we would have it regarded as an asylum for the industrious and honest mechanic and laborer, who, by sudden injury or disease, is temporarily prevented from laboring for the support of himself and family, and who, by proper care and medical treatment, may have his sufferings alleviated, and be sooner restored to his health and his family, and enabled to resume his labor. We would have it a home, to which the respectable domestic may be sent when struck down by sickness, whose attic chambers cannot be made comfortable, and who cannot receive the requisite attendance, however well disposed may be the family in

which she resides. We would open its doors to the stranger overtaken by disease, when absent from friends and home, and to all others among the various classes of society who in sickness require that comfort and medical advice which their means and homes cannot afford."

With the growth of the city, there was, of course, an increase of the persons requiring hospital treatment, and the necessity for enlarged accommodations, which was apparent in 1849, was daily manifested more and more painfully to those who were professionally cognizant of the disease and suffering incident to our large and compact population. To all who examined the subject, it was clear that there were needed in Boston hospital accommodations more nearly in accordance with its character for well-directed benevolence, and corresponding in a greater degree to those of other American cities.

In 1860, the Mayor, Hon. F. W. Lincoln, Jr., renewed the appeal of his predecessors in office, to the City Council. A Committee soon reported in favor of building a Hospital, and in obedience to an order recommended by them, and passed by the City Council on the 24th day of December, 1860, a lot of land on the South Bay territory, owned by the city, was appropriated for a City Hospital.

During the next year, another Committee of the City Council selected plans for a building, which were adopted; but subsequently, in the year 1861, upon the suggestion of the Committee on City Hospital, they were considerably modified, and the actual work of erecting a building was begun.

A central building, two pavilions, and the necessary auxiliary buildings were substantially completed in May of 1864, and on the twenty-fourth of the month were dedicated with appropriate services.

The lot of land upon which the Hospital stands is bounded northwesterly on Harrison Avenue, four hundred and fifty-

four feet; southwesterly on Springfield street, six hundred and thirty feet; southeasterly on Albany street, four hundred and fifty-two feet; northeasterly on Concord street, six hundred and fifty-eight feet; and contains in all about 292,000 square feet, or six and seven-tenths acres. In addition, there has been set apart a lot of land containing 69,318 square feet in the rear of the Hospital buildings, on the easterly side of Albany street, upon which a Small-Pox Hospital, Cholera Wards, coal sheds and stable have been erected.

The present permanent buildings are six in number: the central building, two pavilions, the boiler house, contagious ward, and out-patient building. The central building, which is eighty feet by sixty, is connected with the pavilions by corridors open above and closed in below, and contains in the basement story a store-room, apothecary's shop, laboratory, dining-room for the employés, the kitchen and other rooms necessary for the culinary operations of the Hospital. Upon the first floor are the rooms occupied by the Superintendent and his family, the Superintendent's office, and the business room of the Trustees, which is also used for the reception of visitors. The second story consists of apartments for paying patients; in the third story are bed-rooms and closets for storage; and above is an operating room, octagonal in form, suitably lighted, heated, and ventilated, but quite inadequate to the present wants of the Institution.

The two pavilions are substantially alike in their construction. They are one hundred and forty-eight feet in length and forty-eight in width, three stories in height, beside the basement. In the basement of each are the nurses' kitchen and store-room for supplies, small wards for the temporary accommodation of patients, and also a room appropriated for the clothing of the patients in the pavilion, which is arranged with stationary boxes, numbered to correspond with the beds. In the first, second, and third

stories are large wards, with dining-rooms for convalescent patients, nurses' chambers, bath rooms, water-closets, and other conveniences, rooms for the house officers, and a consultation room for the surgeons and physicians. These wards are each eighty feet long, and twenty-seven feet eight inches wide. The two lower are sixteen feet, and the upper ten feet in height. Each ward will accommodate comfortably twenty-eight patients. The Hospital accommodations are limited now to two hundred and thirty patients.

The boiler-house and laundry, which is three hundred feet from the central building, and connected therewith by means of a covered way, contains on the first floor the boilers, the fan, engines for carrying the fan and machinery for the washing and ironing rooms, arranged with the most approved apparatus for labor-saving and convenience, and furnishing the steam for heating and ventilating purposes.

The Hospital is warmed and ventilated as follows: Air forced through ducts, by means of a large fan at the boiler-house, and warmed by coils of steam-pipes placed in these ducts, is carried to every part of the buildings, thus affording the means of heating as well as ventilation. Direct radiation is provided for in a portion of the rooms, to be used in case of necessity. The steam-pipes over which the air passes for heating the different apartments in the central building, are placed in coils in chambers connected with the air ducts. Those for heating the pavilions are located in the air passage, beneath the floor under the corridors leading to the pavilions. The passage through which the air passes after having left the main duct on its way to the pavilions, is divided into two compartments, in one of which is located coils of one inch wrought-iron pipe. The steam, after passing from the boilers in a large iron pipe, is distributed through these coils, being regulated by valves under charge of the engineer. After passing through the coils it enters a steam trap located

at the foot of the coil, which is so constructed that no steam can pass, where, after being converted into water, it is conveyed through a cast-iron pipe to a reservoir, located at the head of the air duct; from thence it is pumped into the boilers at a temperature of from one hundred and eighty to one hundred and ninety degrees; that this process saves fuel and water, is proved from the fact that the boilers have been used for several days without any but the water so returned. Through the other compartment, cold air passes. These two compartments are so arranged that the cold and warm air are brought together in the several wards where they come in contact, before entering the room.

CONTAGIOUS WARD.

The pavilion for the treatment of contagious and infectious diseases is located near the southeast corner of the grounds originally appropriated for the use of the Hospital.

The dimensions of this pavilion are as follows: One hundred and one feet five inches in length, and forty-six feet five inches in width, two stories in height, with a basement to be used for storage, and a ventilating chamber ten feet wide, extending the whole length of the building. The first story is divided into twelve rooms, six on each side, fourteen by fifteen feet in size, and fourteen feet high. Ten of these rooms are designed each to accommodate two patients, one as a room for the nurse, and one for a kitchen.

The second story is divided into twelve rooms, fourteen by fifteen feet in size, and eighteen feet high, with arched ceilings; ten of these rooms are for patients, one for the nurse, and one for a bathing room. A hall, or passageway, ten feet wide, in each story, extends the whole length, with a staircase at each end; water-closets are provided in each

story. The building is so arranged that each room is surrounded by brick walls, directly upon which is a coating of hard-finished plaster. The pavilion is heated by steam from the boilers connected with the main Hospital, and the pipes and coils are so arranged that the rooms can be separately heated. The ventilation is original in its arrangement; the middle walls are a succession of flues, twelve inches square, three of which in each room are for ventilation, with an opening in each, two of which are near the ceiling and one near the floor. Another flue serves to convey fresh air direct from the fan, and is regulated by a valve. The ventilating flues connect with the ventilating chamber. The rooms are each furnished with a wash-basin and water. The building is connected with the main Hospital by a covered corridor. The plan of ventilation was devised by the Superintendent, L. A. Cutler, Esq., to whose zealous labors and untiring devotion the Hospital is largely indebted for its present position.

OUT-PATIENT BUILDING.

The building for out-patients is one story high, with a Mansard roof; and is one hundred and five feet long by thirty-three broad. It is built of brick, trimmed with granite. It has a cemented and arched cellar, under the whole structure. It is finished entirely in chestnut, being panelled up about three feet from the floor. The latter is of hard pine. There is no paint about the building. It contains the following apartments:

The porter's room, or lodge, thirteen feet by nineteen, with a vestibule ten and one-half by twelve and one-half feet. Through this room is the only entrance to the Hospital, other than by carriages. It is entered by large glass doors,

opening on to the street; and through it, and under the porter's eye, must pass every person going in or out of the building. Here is kept a list of all patients, and in what wards they are to be found. All articles of food or drink brought the sick are inspected here.

Passing straight on from the porter's room, we enter a corridor six feet wide by twenty-three long. The first door on the left opens into a room twelve feet by eighteen, furnished with settees, to be used as a waiting-room for those who come to be examined by the admitting physician. From this opens his private room, for examination, eleven and one-half by eighteen feet. At the bottom of the entry we find a large door leading into a general out-patients' waiting-room, twenty-four and one-half by thirty feet. This large room is arched up into the Mansard roof, and is eighteen feet high. It is filled with settees for the out-patients, and these are occupied, on the average, by one hundred and thirty patients. Large folding-doors connect this with another room of equal dimensions, for examination and clinical instruction. This is furnished with desks, water-fixtures, gas, tables, cupboards for solutions, collyria, etc., and a cabinet of wax models of the diseased eye. On three days in the week these rooms are occupied by the ophthalmic surgeon; and, on the alternate days, by the physician to out-patients. (The surgical out-patients are treated every day in four rooms adjoining the accident ward, in the basement of the surgical pavilion.) These two larger rooms, thrown into one by folding-doors, make an apartment forty-three by thirty feet, well adapted for clinical instruction to a large class of students, or for lecture rooms; and equally well adapted for coroners' inquests, and funerals.

Beyond these rooms is still a third, or physician's room, twelve and one-half by eighteen feet, arranged for private examinations, and with close shutters for the ophthalmo-

scope. This room is now used, three days in the week, by the *Aurist* of the Hospital. A private door for the officers opens from this end of the building into the Hospital yard.

These comprise all the buildings at present erected within the hospital grounds. The growth of the city, and the necessity for a more precise classification of diseases will, ere long, require the addition of other buildings. As at present organized, the two large pavilions, are evenly divided between the medical and the surgical cases. There is a wing for contagious diseases, medical and surgical; and ophthalmic wards for cases operated on. The out-patient department is both medical and surgical. There are separate departments for the eye, the ear, and the skin. It is hoped that a new pavilion, with an operating room on the ground floor, may soon be erected.

That the growth of the Hospital will soon necessitate its enlargement, the following statements will prove:

PATIENTS TREATED		OUT-PATIENTS TREATED	
In 1864	475	In 1864	371
" 1865	1,066	" 1865	1,143
" 1866	1,432	" 1866	3,324
" 1867	1,534	" 1867	7,015
" 1868	2,078	" 1868	7,691

The number of accidents seeking admission during the five years has been, 129; 242; 345; 328; 421; respectively.

The annexation of Roxbury and Dorchester to Boston will widely increase the demand for hospital accommodation. The city proper, now numbering about a quarter of a million of inhabitants, must require eventually a Municipal Hospital of five hundred beds.

The most gratifying fact of all to record is, that while the number of patients treated within the wards has doubled, the ratio of mortality has diminished over one per cent.

The rate of mortality is as follows:

In 1865	$8\frac{4}{10}$ per cent.
" 1866	8 " "
" 1867	$8\frac{6}{10}$ " "
" 1868	$7\frac{3}{10}$ " "

Clinical instruction to students of medicine is given twice a week, throughout the year, by visits in the wards and by lectures; daily in the out-patient departments, and three times a week in the special departments of the eye, ear and skin.

Operations are performed in the amphitheatre every Friday, at 11, A. M.

It would be unjust, as well as ungrateful, to close without an allusion to the past members of the staff.

Six of these have died, viz: Drs. John C. Dalton, John Homans, S. D. Townsend, A. A. Gould, C. H. Stedman, and F. C. Ropes.

Dr. DALTON was elected among the first of the medical staff, before the Hospital was opened, and, had he lived, would have rendered most valuable service. He died before the institution was organized.

Dr. JOHN HOMANS, already advanced in years and honors, consented to fill the vacancy, and discharged the onerous duty of visiting physician most faithfully, for a year. His age obliging him to resign, he was afterwards elected on the Consulting Board, where he served until his death.

Dr. S. D. TOWNSEND, having already acquired a permanent reputation as a surgeon, consented to give his services on the Consulting Board.

Dr. AUGUSTUS A. GOULD, well known for his scientific as well as professional ability, gave also his time and strength to the interests of this Hospital.

Both these gentlemen continued their connection with us during the remainder of their lives.

Dr. Charles H. Stedman, one of the Visiting Surgeons, and the oldest member of the surgical staff, died while in the active discharge of his duties, after two years of a service, eminent for its usefulness, and marked by the esteem of his colleagues.

Dr. Francis C. Ropes, the youngest surgeon, but also one of the most zealous and promising, was cut off in his prime, after being connected with the Hospital less than two years.

Drs. Charles E. Buckingham, William W. Morland, J. Baxter Upham, and A. Coolidge, resigned their positions, after varying length of service. The three former were compelled to retire by the pressure of private practice and other duties; the latter resigned to take an appointment in another institution. Dr. Buckingham has since been elected a member of the Consulting Board.

The Hospital owes much of its success, in its earlier years, to the disinterested and faithful labors of all these gentlemen.

JOHN T. BRADLEE, *President*,
NEWTON TALBOT,
SAML. T. SNOW,
T. L. JENKS,
THEODORE METCALF,
DAVID H. COOLIDGE,
JAMES GUILD,
JOEL RICHARDS,
N. C. NASH,

Trustees.

REPORTS.

ARTICLE I.

PERINEPHRITIC ABSCESS.

ITS COMPLICATIONS AND ITS TREATMENT.

BY HENRY I. BOWDITCH.

At a meeting of the Society for Medical Observation, May 4, 1868, I read, and afterwards, in the Boston *Medical and Surgical Journal*, I published, three cases of perinephritic abscess. The importance of the inferences, which I deemed myself justified in drawing from the history and treatment of these cases, induces me to bring the subject again before the profession.

In this paper I shall present abstracts of ten cases. Seven of these have not been published, viz: four that have occurred at this Hospital, — three in my own private practice. The remainder will be those above alluded to, but very briefly stated, the details having been given in the *Journal*.

CASE No. 1.

K. S., aged 17. *Surgical Records, Vol. II., p. 6.*

1867. April 9. Patient had been troubled with occasional incontinence of urine about three years,

otherwise she had always enjoyed good health for so frail a person. She had never had any trouble with her back, neither was there any deformity or tenderness over the spine. The menses had never appeared. Had never had chills, but had had profuse sweats within a fortnight. Two weeks before entering the hospital, she noticed a slight soreness over the right kidney, and a small tumor, which grew slowly till her entrance. At that time there was quite a large swelling over the right kidney, about three inches in diameter; fluctuation was circumscribed. It was not connected with the spinal column.

Patient was etherized, and the tumor opened by Dr. Cheever, and about ℥i of healthy pus discharged. A probe entered the wound about three inches. No denuded bone could be found. Poultice ordered.

The discharge continued quite free for several days, and the patient continued to get better, with no untoward symptoms, until May 10th, when she left, nearly well, only a small sinus and scarcely any discharge remaining.

Remarks. — This case is one of the simplest kind. It ran its course rapidly. Fluctuation in the right renal region showed itself in two weeks, and the abscess was then opened readily. Laudable pus was found, which continued to discharge for nearly a month, when the patient was discharged, nearly well, only a little sinus remaining. The case was plain in its origin, course, treatment and termination.

CASE No. 2.

H. L. H., aged 5. *Surgical Records, Vol. XIII., p.* 227.

1867. December 31. Always healthy till the present attack. Four weeks before entrance, first complained of pain just over crest of the ilium, on the left side, and four days afterwards he began to walk lame. Five days before entrance, a swelling was first noticed at the seat of pain. This had gradually increased till he entered. There was then seen a large swelling occupying the whole space between the left crest of the ilium and the ribs, and from the vertebræ to the anterior superior spinous process of the ilium. This was not painful, but very tender to touch. Skin tense and red. No curvature or tenderness of the spine. No pus in the urine. His mother thought the urine lessened since the trouble. Ordered to keep quietly in bed, and poultice to be applied to the back.

1868. January 1st. Patient continued about the same for the two following days, with moderate appetite and but little pain. On the 3d he was etherized.

After ascertaining that the hip was not diseased, the abscess was opened, and about ʒvi of pus escaped, but so thick that it would scarcely flow. The cavity occupied the whole space from the ribs and spine to the anterior superior spinous process of the ilium. No necrosed bone.

From this date until the 24th, he continued to get better; his appetite returned; his sleep was good, and

he had but little pain. The discharge varied but little from day to day, but on the 4th it was very slight, and so continued.

On the 15th and 19th, some pus was found in the urine. The poultice was then omitted and a carbolic acid dressing ordered.

On 24th, wound nearly healed; and on 29th wholly so, and patient was in very good condition.

Urine examined 30th, and February 5th, and no pus found. On 5th, he was discharged, *well.*

Remarks. — This case is entirely similar to the first, and the same reflections may be made upon it.

CASE No. 3.

E. K., aged 23. *Medical Records, Vol. XXVIII., p.* 100.

1868. May 7th. Mother died of phthisis. Patient had never had a very strong constitution. Till she was fourteen she was subject to frequent pain in the right hypochondrium. Since that time till recently she had been free from it. Had had one child; now two years old; labor normal. Seven weeks before entrance, had profuse menorrhagia for two weeks, which greatly exhausted her. The catamenia had not returned afterwards. For some time the catamenia had been irregular, with prolonged intervals, and lasting about three days. At the cessation of the last period, she worked very hard in getting ready for removal from Baltimore to this city; and after she arrived, she had been much exposed to sudden changes of heat and cold. She remained tolerably well, however, with the exception of being quite

weak, till two weeks before her entrance, when she had a pain, sometimes acute, sometimes dull, in the hepatic region. She had had no nausea or vomiting. No cardiac or pulmonary symptoms. The hepatic region had been excessively tender, though it was not so at her entrance. About two weeks before, her face began to be yellow. At visit, she was in bed, with intelligence good, her face thin, anæmic in look, and quite yellow. Conjunctivæ pearly. Pulse one hundred and ten. Respiration twenty. Tongue rather dry. Appetite poor. Bowels not open for three days. Micturition easy. Tenderness on pressure in a small space on the right side, in the lumbar region below the false ribs. Sleep, poor.

℞ Pil. Hydrargyri, grs. vi.
℞ Potassii Bromidi, grs. xxx. At bedtime.
Diet. Milk, beef tea, custard.

8th. No dejection from pill last night. Seidlitz powder this A. M.

Poultice, wet with laudanum, twice daily at the seat of pain.

9th. On examination of the hepatic region, the abdomen was found entirely free from pain. Upon pressing over the right renal region, tenderness was found extending over a space two inches square, about the lower end of kidney. The right renal region looked a little fuller than the left. No fluctuation could be detected, but a soft, slightly elastic, doughy feeling was perceived on pressure.

From this time till the 15th, the following items were noticed: — On 11th, some soreness of the gums.

On 14th, severe pain just below the right axilla for an hour, and tenderness in the right renal region more acute on pressure. A cathartic pill (pil. rhei comp. grs. iij.) was ordered, followed in the afternoon by severe pain in the bowels, for which she took an enema of soap and water. Her strength meanwhile did not improve.

Tinct. cinchonae comp. ℥i. with tinct. of catechu ℥ss. m. were ordered as a wash for the mouth, and on the 12th, cod liver oil and whiskey mixture ℥ss. after food.

On the 15th, there was tenderness on pressure over a larger surface, and more decided fulness, with more positive evidence of inflammatory action than when she first entered. Enema of last night operated, with much relief. Patient wanted more food, and meat was ordered.

On 16th, a cough was noticed as troublesome, and continued so. On the 18th there was less tenderness, and patient was able to lie on the right side for the first time.

On 16th, an antimonial and squill mixture, ℥i. p. r. n. and Dover's powder gr. v.

20th. Above mixture of 16th inst. was omitted, and another form of expectorant mixture ordered.

25th. For past week, absence of respiratory murmur in the right back, from the base of lung to an inch above the lower angle of the scapula. From this point to the apex of the lung, the respiration was feeble and indistinct. Clear and strong on other side. Respiration clear through the front of the chest.

26th. In the right renal region, and extending as far as the crest of ilium, there was a hard, dense

surface, somewhat fuller than the corresponding part of the left side, tender on pressure, doughy to the touch, and retaining for some time the prints made by the tips of the fingers. Over all this surface, and extending upwards to near the angle of the scapula, the percussion perfectly flat. These appearances were strongly indicative of the presence of pus, though patient had had no chill; but her condition was quite favorable, and had improved a good deal since she entered the hospital.

Poultices three times daily.

30th. Surface softer, pitting more readily on pressure. One or two red spots on the surface. General condition comfortable.

Dress part with spongio-piline, wet with warm water, to be kept constantly moist. From this time until 9th, no marked change; cough reported as troublesome, was easier on the 5th, when patient was able to be up, and walked out.

June 9th. Had suffered a good deal from a throbbing pain in the affected part, on 8th and this morning.

At 11 A.M., patient was etherized, and Dr. Derby introduced an exploring trocar at the softest point. No pus followed. The trocar was pushed in several directions, but with like results. Poultice re-applied to the wound and solution of the sulphate of morphia was given at bedtime.

10th. As well as before the operation. Edges of wound not open. Patient requested, and was allowed to sit up. From this time till July 8th, there was an almost steady improvement. The pus that

came from the wound, which was probed daily, gradually increased from a few drops, such as would result from a wound from the exploratory incisions. The probe passed in nearly an inch and a half. On 12th, about ℥ss. and rather more than the size of wound would give. On 18th, probably ℥iii. or ℥iv. had been discharged the previous twenty-four hours. The inflammatory induration also gradually subsided and became of less extent. The thoracic signs very slowly improved. On 16th, no murmur could be heard at base of right lung. 18th, I was asked to examine it, and found it had become clearer since the discharge began. There was once or twice severe pain, and once a threatening of another opening; but, generally, patient reported better. She had continued to have a somewhat sallow aspect. The urine examined on 17th showed Sp. G. 1010, and color normal, — a trace of albumen, — by microscope, nothing abnormal.

From this time, till July 8th, the patient steadily improved, pus freely discharging, and the cough ceased. The skin, June 26th, seemed soft, as if an abscess were about to open nearly two inches above the incision.

On the 30th, great pain in left renal region, relieved, however, by solution of morphia. Bowels being habitually costive, compound rhubarb pill was occasionally ordered.

July 8th. Opening of abscess was enlarged yesterday. Very little discharge of pus at the present time. Auscultation showed a somewhat improved condition of the lung. No cough for a long time.

Flesh and strength increased. From this time till the 25th no great change. Wound still open. Poultice omitted on the 18th. On the 25th report as follows:

July 25th. Purulent discharge quite small. The probe introduced passed upward and inward for a distance of two inches; not more than half an inch in any other direction.

On examination of the lungs respiratory murmurs throughout right back, but decidedly weaker between the angle of the scapula and the base, than in the corresponding part of the left lung. Upper half of right lung is clearer than before. No cough or expectoration. Aspect of patient very much improved. Appetite and strength increased. Walked about ward with but slight lameness. Was advised to leave hospital and to go into the country, if possible. To continue the same treatment.

Discharged in a few days nearly well.

Seen four months after discharge and found perfectly well.

Remarks. — This third case, instead of being plain in its commencement, was insidious, and of doubtful character. It came on, however, as many of them do, after unusual labor, and showed itself by pain in the side, and some yellowness of the skin, which last symptom is rare. No distinct fluctuation was ever felt in the tumor in the renal region. At length the right pleura became affected. These appearances compelled the attendant physician, Dr. Blake, and myself, who had been associated together in

the treatment of case nine, to urge the surgeon to explore, although, according to common surgical rules, it would have been more proper to wait. We feared ulterior results on the thorax or other adjacent organs. Notwithstanding pus was not brought out immediately by the operation, it became evident, from the steady improvement that began to appear in the symptoms, and from the gradual freer discharge of pus, that the tapping had been of service. I have little doubt that it prevented the catastrophes that took place in cases four and five, and the long illness of six, eight, and nine.

The following cases have occurred in my own private practice, consultation, or otherwise, since May, 1866:

CASE No. 4.

E. A. S.

1869. January 9. A boy of weak constitution, but having had no severe illness. Grandmother and two great-aunts died consumptive. When two years old he had croup, and had been liable to attacks of it on taking cold. Whooping-cough two years ago, and since then more apt to cough, but he had been out of doors walking about, and seemed as well as usual before the present attack.

1868. September 1. Severe pain seized him in the right side of the abdomen, and a distinct prominence below the liver became very manifest. A cough very soon began, and with relief to the pain. He was soon up again, and able to walk about in three days.

About October the cough came on very severely,

with *apparent* vomiting, in connection with it, of a frothy mucus, no dark sputa. Pulse was about ninety-six. He became emaciated, but had a strong voice. The attending surgeon found then dulness below the middle of the right lung; clear sound elsewhere. Gradually the patient got better again, and the physical signs improved. But three weeks afterwards, more than a half pint of pure pus was discharged by coughing, followed by a lessening of the tumor under the ribs. On three separate times the same occurrence took place, as if from the discharge of an abscess, but usually he raised when coughing only a frothy mucus. At times this was slightly bloody, or rusty and purulent. Pulse was from ninety-six to one hundred, and usually strong. The cough continued. Never severe dyspnœa at night till three days before I saw him, and then it came on with more pain in the side, and with more distinct lameness in moving the same part. Previously for several weeks there had been some lameness. At my visit the patient was pale and thin. Preferred to lie on back, with knees drawn up. For a week some chills and sweating. Never much fever. Appetite fair till a few days previously.

On percussion, rather tympanitic, right side of thorax, at the upper part, front and back; flat at right lower half of chest; intercostals not distended or filled up, but voice slightly modified. Respiration very obscure in the lower right chest, front and back, with tendency to bronchial at the right; indistinct râles heard in various parts, least under the axilla. Puerile respiration, whole left lung, front and back.

On deep pressure in the renal region, an elastic feeling, as of the lower part of a tumor. The upper portion could not be reached, but seemed to extend toward the thorax.

The abdomen rather full, and tympanitic, became flat toward the back. This slight tumor is the remains, according to the report of attending surgeon, of the larger swelling felt before the discharge of pus took place through the lungs.

Tapped the chest behind, below the angle of the scapula, between eighth and ninth ribs, and got ℥iij. of dirty, fetid pus, and I could not draw more.

Fusel oil three drops in one drachm of simple syrup three times daily.

I stated my belief, from the history of the symptoms, that the case was one of perinephritic abscess that had opened through the lungs, and had subsequently contracted, so that only a small portion of the walls of the abscess could be felt at my visit.

Jan. 19th. Dr. —— reported by letter:

"Little change during P. M. and evening, except that he rallied a little and took nourishment.

"10th. Twenty-three hours after operation, quiet night, expectorated about ℥iij. frothy sputa, with a depraved matter, like that drawn off, except not quite so fetid. Pulse one hundred and four. Takes medicine and nourishment. Complains of soreness in the whole of the right side, from the apex of the lung to the crest of the ilium. Copious sweat during night. Lameness of the right arm. General aspect much as before the operation. Tongue a little red and the tip cleaner.

"11th. Better night till half past five A. M., when he had a severe access of cough, lasting thirty minutes, with copious sputa; and a similar attack at half past seven A. M. During the last thirty hours, if he turned to the left side, a similar matter to that drawn through the canula, ran from his mouth without effort or cough, and in amount more than he had expectorated twenty-four hours before. A slight dejection in the night. Tympanites half gone. Very sore over all his body, and objects to being moved at all. Weakness and fatigue complained of. Pulse ninety-four to ninety-eight. Tongue much cleaner. Takes wine freely; cares less for food. On the whole, looks better, notwithstanding bad symptoms, but I think a permanent opening will have to be made within a week at furthest."

On 13th Dr. —— wrote in haste to inform me, that on the night of the 12th the boy coughed and "strangled" for some time. Raised a teacup full of the same matter as sputa. Took nourishment simply as medicine, without relish. Very weak, and soreness about puncture. He would not be moved, and his skin, for some inches in extent near the puncture, was red and tender to the touch. Pulse one hundred. To-day easier; slept well. Five dejections. Less soreness. Pulse one hundred. Right back swollen to the crest of ilium, and very tender and red. More appetite. Dr. —— asked whether it would be proper to operate, and where? I advised an immediate free opening where I had punctured.

No operation was performed, and the patient died eight days after the tapping. The inflammation and

swelling of the chest extended, and was of a dark purple color for a considerable space around the puncture, and proceeded up the back to the scapula and clavicle, but not downward at all. Great suffering during the last forty-eight hours, relieved by chloroform inhalations.

Autopsy.—Liver of enormous size, and weighed four pounds; color of beeswax, tough, and cut surface showed no lobules. The right lung was hepatized to a good extent, evidently recent. Pleura inflamed, and adherent largely above and somewhat to the remains of lower lobe. Upper lobe free; upper half of lower lobe was perforated by a cavity twice the size of a man's thumb, with hardened sides; but no trace of tubercle anywhere. Following down the cavity it passed through the diaphragm into an abscess *above and back of the kidney*, and surrounding the upper half of this organ, which itself was anæmic and was but a little enlarged. Six ounces of thick depraved matter, like that drawn from the chest by tapping, were found.

Remarks.—This case was a peculiarly sad, but a very instructive one. It must have gone on very rapidly, and all the symptoms were at first abdominal. The abscess burst in three weeks into the lung with relief, almost complete to these abdominal symptoms; but the thoracic became very severe. I saw him four months after his first illness suffering as in an advanced stage of phthisis, with orthopnœa, and at times having copious discharges of fetid sputa. From the history and from the fact that a small, tough, round tumor, about the size of an egg, could

be felt projecting below the ribs in the renal region, and the signs of pleurisy, I inferred that this was a perinephritic abscess contracted. An operation seemed called for in the chest, while none in the renal region was possible. Thoracentesis, with an exploring trocar and pump, was performed, and a very little dirty, fetid fluid was drawn off. Little or no relief followed, but an erythematous inflammation setting in, the patient died a few days afterwards. This is the only time out of more than two hundred and fifty cases of thoracentesis which I have had during the past twenty years, in which any real trouble has followed the tapping by this method. A question seriously arises whether, if an early opening in the renal region had been made of the abscess, deep-seated though it doubtless was, and obscured perhaps in its fluctuation, as in cases three and nine, life would not have been saved as in case eight.

CASE No. 5.

Mrs. N., aged 46, Boston.

Living in a low locality, and with a damp cellar. I saw her on December 14, 1868. Never ill before. Had had six children and good deliveries. From April she had been weak and ailing. No cough. At one time some menorrhagia, but for months amenorrhœa. Appetite very poor; costive, except when using cathartics. At times dysuria, etc., scalding and partial stopping of the urine, which was passed in a small quantity and with frequent desire. Some swelling, but not severe pain in abdomen. Copious cold sweats; no cough or dyspnœa or pal-

pitation. Never lameness, but had kept her bed since September, owing to weakness. At visit I found her pale, thin and miserable, looking like a person in phthisis. Pulse one hundred and eight, very small. Urine loaded with pus and albumen. A tumor was felt occupying the space between the cœcal and renal regions, extending up under the ribs, and downward below the line drawn from the anterior inferior spinous process of the ilium. It was rounded like an orange there, and fluctuating and elastic. Motion evidently transmitted from the front to the renal regions, and *vice versa*, as noticed while two hands grasped front and back.

Powdered rhubarb and jalap, āā, five grains daily. Beef tea, milk, two glasses sherry wine. Large warm water injection daily. Iodine ʒss. ether sulphuric ʒi. to be painted over tumor.

17th. Three or four past days pain in abdomen. Pulse one hundred and four. Slight sonorous râle in lower part of right back.

Feeling assured that this case needed an operation, I had asked a surgeon, who declined to perform one, but advised tincture of the muriate of iron.

I gave it, omitting powders, previously ordered.

I saw her but little, believing that unless an operation were done, little good would result, except from a general tonic course. I had urged the operation because of the tumor, and because of the thoracic signs.

1869. January 31. Tumor perhaps a little smaller. Less urine. She complained most of the character of the urine, and seemed to think that the only difficulty.

She had confusion of the head; memory deficient. Pulse eighty-four.

February 1st. Tumor again of full size; urine more purulent, with disappearance of head symptoms.

February 10th. Tumor collects and lessens about every third day. More pus in urine, apparently as tumor is reduced in size. Pulse eighty-five.

February 16th. Feels pretty well, more pain in micturition. At base of right lung a slight râle. Pulse eighty-four.

February 26th. Vomited yesterday, and day before; had constant retching; thirty-six hours very weak, had eaten almost nothing. Pulse ninety-six.

March 5th. Uræmic symptoms for two days. Dreams. Great quantity of pus in urine, with reduced size of tumor. Less strong.

March 27th. As I saw her rarely, Dr. H. R. Storer was called, and consulted as to the feasibility of abdominal section and removal of the tumor. He declined operating; but subsequently he introduced a catheter into the bladder, and some pure pus was removed with suffering. Tumor as described at first, and pressure on it did not force more pus into the bladder. At my request Dr. S. passed an exploratory trocar into the tumor through the renal region. A small quantity of thick pus and blood followed; a suction pump was imperfectly, but consequently with no more success, applied. A larger trocar was then introduced; a few ounces of the same thick pus were squeezed out. Wound to be kept open by a sponge tent.

1869. April 9. No evil result from tapping. A

little blood in the urine for a day or two after operation; there was much less pus, less swelling of abdomen; appetite better. Only slight purulent discharge from trocar wound, which had not been kept open by tents. No evident trouble in pleura.

April 14th. Again, at my urgent request, Dr. Storer having etherized her, passed in a trocar and again reached pus and brought a seton through "anteriorly as near to peritoneum as he dared." Perfectly laudable pus soon began discharging.

April 24th. Copious flow of pus; none in urine for four days after the operation. Gained in appetite and strength; abdomen a little swelled to-day.

August 30th. The seton had been kept in and moved daily. She had gradually improved and had been able to resume partially her household duties, and to go out of doors. Urine had again become somewhat purulent, especially since getting up and moving about. Bowels regular, with occasional lameness. No menses. Some dysuria and some pain in coitus, which was indulged in but rarely; "feared a womb trouble." Looked stronger than formerly. To the touch uterus not specially tender, but like a multipara. Bladder a little tender. Evident pus in urine.

Tinct. gentian. Ordered to go to the country.

September 29th. Medicine had been continued. Steady, though gradual improvement, but of late had looked somewhat anæmic. Discharge copious from seton; granulations exuberant about anterior opening. Lower one and a half or two inches of the right back were duller than the left, but no other marked sign. As she was becoming anæmic I advised, and

Dr. Storer removed the seton and introduced a tent anteriorly, to be changed every third day.

Tumor decidedly less, and hard, as if contracted, extending vaguely toward bladder. No real trouble found by touch about the uterus and its appendages, and less irritated vagina. Patient was able to be up and about all day at her work, though still an invalid. The seton, she admitted, had apparently done much good. Ordered wound to be kept open. Inject bladder with warm water daily.

November 16th. She had continued to improve; all the pelvic difficulties were subsiding; the urine had only a trace of pus, and the patient seemed on the high road to perfect recovery. She moved about, and felt comparatively well.

Remarks. — This case was one of our most interesting. It also illustrates very well the present unwillingness of surgeons to operate as early as it seems to me we ought to puncture in these cases. It shows the advantage of even the simplest of operations, viz: the seton. Let me briefly state the salient points: I saw her December 14, 1868; she had been ill seven months, and in bed from weakness, emaciation, and debility, for two and a half months. Purulent urine had been passed. There was a large elastic tumor in the renal region, upper outline of it lost under the ribs; distinct, rounded like large swollen kidney below. It could be felt between the two hands, from front to back. I urged tapping immediately as the only course. One of our best surgeons declined to do so. Another, eminent for operations connected with the pelvis, also subsequently declined, thinking that organic disease, probably malignant, of

the kidney existed. Finally, at my urgent solicitation, he passed an exploring needle, and subsequently a larger trocar; pus followed. He did not use the bistoury, though I have great doubts whether she would not have recovered earlier if a free opening had been made for the escape of pus. The danger of that operation, viz. of great hemorrhage, was seen in case seven, and therefore I could not urge it in the case of Mrs. N. The wound of the puncture soon closed. Finally, four months after I first saw her, and eleven months from her first illness, Dr. H. R. Storer, at my suggestion, and under ether, made an issue by passing a seton from near the point of the original puncture in the renal region up toward the front of the abdomen. Abundant discharge of pus gradually came on, and with a steady improvement in her health, and less pus in the urine. The seton was kept in five months, and was removed as she was becoming anæmic, and the bladder was injected afterward daily with warm water. She now, January, 1870, more than a year from my first visit, about twenty-two months from her first illness, though pallid and weak, attends to household duties. The tumor is lessening; there is less pelvic trouble. The injections into the bladder evidently did good, and were continued every other or every third day till December. If omitted longer than two or three days she suffered; more pus being in the urine, and more tenderness of the parts of the pelvis. Of late they have been omitted without injury, and very little pus being found in the urine. The opening in the back still discharges a little.

CASE No. 6.

1869. March 28. Mr. S., of M., about fifty years old, seedsman and gardener, I saw in consultation with Dr. ——. Always liable to asthma, but had usually enjoyed good health, so as to be able to do hard work in his garden.

January 1st. After working was suddenly seized with pain below the right hypochondrium. This was of the severest kind, and accompanied with a swelling and a board-like hardness of the abdomen. He was never well afterwards, although the pain had subsided, and the abdomen was less tense. He had been chiefly confined to his bed and had become emaciated and very weak. Two weeks before I saw him a cough had begun, and he had raised a quantity of fetid matter, and the day of my visit some blood. He was in bed, with a feeble aspect, no great dyspnœa, but occasionally coughing, and having the aspect of one in phthisis. There was flatness in the lower two or three inches of the right back, but no change in the voice, or râle. He could allow the deepest pressure on the abdomen without suffering; and hands placed in front and on the renal region perceived more resistance at the right than the left side, but no distinctly outlined tumor was perceptible. I felt, however, a general thickening of the parts, and perhaps some enlargement of the kidney. On inspection there was a little fulness of the same side, but no local pointing.

Continue iodine application on side. Sustain and wait. Query — if a seton or issue would not do good?

To live in a dry place, instead of a damp one, where he is now.

I regarded the case as one of perinephritic abscess, or at least an abscess connected with the abdomen, that had broken into the right pleura and lung, and was discharging itself through the bronchi.

April 11th. Had been slowly doing well till this day, sudden pain between umbilicus and pubes, and towards the right side, with a long severe paroxysm of cough and entire cessation of it afterwards. After that no cough. Breathing fetid, but no gangrenous sputa before or since. Decided tenderness, and evidently some peritonitis at visit. Turpentine stupes, and afterwards a poultice, relieved the symptoms. There was dulness on percussion below the angle of the right scapula, with obscure respiration; no râle. Between two hands, one in front and the other in the renal region, a resistance was felt.

October 9th. Had gradually somewhat improved in general appearance; had gained some color, and was less thin. Had moved to an adjacent hill, and had done light work in garden. When he first began to move about he had found great difficulty in standing erect, owing to a dragging sensation of the right side of the abdomen, and lameness of the right leg. For several weeks past he had been unable to lie down at night owing to the tickling cough which caused continual expectoration when in the horizontal posture, and continual pain in the right side. The sputa were fœtid like retained pus, and "poured out" rather freely. The pain was increased when no free discharge of sputa. Lay best on the right side;

when on left had a sensation as of drawing in the right. Appetite pretty good; no trouble from food; bowels well, at times loose; never purulent dejection. Urine well. No hectics. Able to go out daily, and also able to trim and pot a few plants. Pulse ninety-two. Tongue slightly coated, but whole aspect much better than at the preceding visit; walked still a little bent forward, but more easily than formerly. Respiration and percussion in front, healthy in both lungs. Behind, flat in lower three inches of right, with absence of respiratory murmur, and quietness generally of that back, and contraction of that side. Normal at the left. An elastic feeling, but no real tumor under the ribs in the renal region. Tender on pressure there. Movements of the right half of the body evidently constrained. A few weeks before this visit he had fallen, striking the right side of the trunk, and could not rise without aid, owing to great pain in it.

Remarks.—Here was a case wholly similar to cases four and eight, and we may certainly ask whether if an early operation had been performed, some if not all of the thoracic symptoms might not have been prevented, and the patient relieved long before. The chest symptoms were so severe at one time as to threaten death. Gradually, however, he had become better, though still far from well, and a long time before a perfect cure was evidently in prospect. He had been now more than nine months ill. The abscess perforated the lung about two and one-half months after the first attack.

The three following cases have been already pub-

lished in detail (*Boston Medical and Surgical Journal*, July 9, 1868). I shall therefore give merely outlines of their principal features.

CASE No. 7.

S. of W., aged 27. Male.

In active life requiring much driving, and consequent fatigue. First week in May, 1866, while digging, was seized with pain in the right lumbar region, running down outside of the trochanter, and thence to the calf of the leg — not constant — at times wholly absent. At his business for a few days and then became worse. I saw him May 12th, in bed, pale, thin, lameness of leg, obliged to lie on back; flexed thighs, pain severe on extension. Pulse ninety-two. Appetite small; bowels irregular, easily moved; if costive, pain, increased with some flatus, but never great distension or tenderness. No cephalic or thoracic symptoms. Nights restless. A deep-seated, rounded, doughy, non-fluctuating tumor, felt between the ilium and the false ribs, easily grasped between two hands. According to advice, a surgeon was called, who thought no abscess existed, and consequently declined opening, but advised opiates. In a week he was much worse in every respect; breath fetid. Pulse one hundred and six. No dejection for a week. Tumor more tender and more prominent, chiefly in the renal region.

June 6th. Pointing in the same part. Dr Hodges incised, taking out a quart of pure pus; severe hemorrhage ensued.

9th. Patient much exhausted, constant vomiting. Revived by enemata, etc., stimulants and *morphine injections, subcutaneous*. No real trouble afterwards, but a slow, though perfect recovery.

July 17th. Went to recruit at the sea-side; a little serum only was discharged from the wound.

September 1st. No discharge.

November 1st. Well, only a slight tenderness in the cœcal region.

Remarks. — This, at first, was a case of somewhat doubtful character, as to whether it was an abscess or ileo-cœcal trouble. The history of the case, the difficulty in moving the leg, the absence of constipation, and the tumor, led me to think, from the first, that a deep-seated abscess was threatened. I believe that unless an operation had been promptly and skilfully done, this young man would have either died, as in case four, or he would have had a lingering illness, with perhaps almost threatened death, as in case six, or severe pulmonary symptoms, as in cases three, four, and eight.

CASE No. 8.

1866. June 11. I saw a clerk at T ——, said to be dying of phthisis, though he had no hereditary tendency to it, but when I saw him he seemed to have the emaciation and dyspnœa of that disease in an advanced state. He had a lameness of the right leg which, as it had existed from the first attack of his complaint, led me immediately to doubt whether phthisis existed, and to suspect abscess about the

muscles moving the thigh, perinephritic in fact, as in case seven. The history and actual examination proved the truth of the surmise.

It appeared that in January he had not felt well, but had kept at business. In February he was exposed while working in a swamp, and lameness of the right hip ensued. Suddenly in March he was stopped in the street by its severity, and from that time he became more ill. He had had chills and fever. His lameness also increased. About the middle of April cough began, and two weeks after that he suddenly raised a large quantity of thin greenish fluid. This gave partial relief, but another attack took place in the middle of May, and the fluid "ran out of his mouth," he having since his previous attack raised but little. Orthopnœa and violent paroxysmal cough supervened, with night sweats and great emaciation. Two days before I was called, a new symptom, viz. pain in the other side and bloody pneumonic sputa began, and had increased his difficulty. On auscultation bronchial respiration heard in the lower parts of both backs; on the left accompanied with pneumonic crepitant râle, and on the right with coarser râles. There was generally less murmur in the right back, and dulness on percussion in lower part. There was tenderness, fulness, and a doughy resistance in the renal region, extending to the front. I deemed it a case of perinephritic abscess that had broken through the right lung, and caused serious obstruction of the same organ, while pneumonia had only recently commenced in the left lung. Obviously, tapping the renal region, if it could be

done, was indicated. Dr. Hodges was immediately summoned, and found a spot soft and fluctuating in the renal region. Pus in large quantity escaped. No serious symptom resulted. On the contrary, from that moment he began to improve, both generally and locally. Forty-two days afterwards I saw him and examined him while on his way to the mountains. He had scarcely a morbid sign, and in looks he was like a new being. All discharge had ceased some time before. There was a slight contraction of the right chest as from old pleurisy. Only a slight crumple heard low in the right back.

Remarks. — I never had a more satisfactory case. The relief from symptoms threatening death in twenty-four or forty-eight hours was so complete and radical after the operation, that one cannot but feel the liveliest enthusiasm for a surgery which is capable of giving so excellent a result. Without it I believe the patient's fate would speedily have been that seen in case four; or, if he had escaped death, he would have had the trials that appeared in cases three, five, six, seven, or nine; viz. long continued illness, with suffering, more or less constant, and at times a threatening of death itself.

CASE No. 9.

A Printer, aged 28.

1867. December 2. Seen in consultation with Dr. Blake, of this city. Four months previously to my visit, while suffering from the debility consequent

on a severe felon on right index finger, he became sallow and feeble, and had hectic fever, with pain in the right iliac fossa. This was at first superficial, afterward deep-seated. At times he had severe paroxysms of it, with great prostration of strength, and great rapidity and feebleness of the pulse, and during these attacks he was supposed to be dying. Bowels usually free, except during these paroxysms, and then they were somewhat costive. No thoracic or cephalic or stomachic symptoms. Urine found normal by chemistry and the microscope. From the first a rounded swelling had been noticed extending from the hepatic towards the cœcal, and back towards the renal region. No fluctuation, but an elastic, doughy feeling, with a tenderness on pressure in same regions. A slight pleural friction sound was heard in the lower right back, and the respiratory murmur was less there than in the corresponding part of the left back. Two surgeons, when consulted, declined interfering, because the abscess was not advanced enough. Finally, Dr. Hodges, with great caution and I think some doubt, on the urgent solicitation of Dr. Blake and myself, cut down in the renal region and introduced a small trocar in three different directions. No pus followed! But suppuration then commenced from the wound, which was kept open by a plug of lint. There was never any return of the paroxysms, and the patient went steadily on to health, a little pus exuded daily, but at no time was any great amount discharged.

Remarks. — This case was perhaps one of the most important in the difficulty of deciding upon the

operation, the apparent failure, and yet its ultimate success. Contrary to the dictates of surgery, and notwithstanding there was no evidence of fluctuation, Dr. Blake and I urged the operation: 1st, because of the long illness and gradual deterioration of health; 2d, because of the peculiar paroxysms threatening death; 3d, because of the commencing but latent thoracic disease; 4th, because of my experience in cases seven and eight. The result was all that could be wished for. The patient himself dated the commencement of his recovery from the time of the operation, and although at no one time was there any copious discharge of pus, I have no doubt of one of three following propositions being true, viz. 1st, either that a small abscess really was opened at the first operation, but owing to the minuteness of the trocar the pus would not flow (this actually happened subsequently in case five); or, 2d, it opened subsequently and gradually discharged, but not sufficiently freely to show itself on the dressing; or, 3d, the issue caused by the opening and discharge of pus from adjacent parts relieved the local, as yet non-suppurating swelling, and thus a cure was effected. Either of these suppositions is sufficient for the result. Neither is necessary for our satisfaction, which of course was unalloyed at the evident good that immediately supervened after the operation.

GENERAL CONCLUSIONS.

In the publication I formerly made of cases of this disease, I insisted on two principal points which I deemed of vital importance in the history and the treatment of the disease.

First. — I urged the danger that existed of chest complications in connection with, and in consequence of, the abscess below the diaphragm. I alluded to the facts that these complications are often very latent in their progress, and that they really at times became the more important features of the case; that they may sometimes cause death, and that they are certainly liable to produce long-continued, wasting disease which have a very slow, or perhaps imperfect cure, even if absolute death do not result with so-called tuberculosis of the lungs, etc.

Second. — I endeavored to impress upon the reader the importance of an early and thoroughly radical operation, whereby the pus in the abscess should be allowed to escape. I indicated that the operation might be required even before the common rules of surgery, as now held, would permit of it. These rules suggest delay till some pointing or actual distinct fluctuation occur in some part of the region occupied by the inflammation. This opinion, if strictly adhered to by surgeons, I believe will be fatal in its effects upon many future cases.

These new cases more than sustain these two propositions. Let us consider them in a little detail. Cases number one and two were simple and uncom-

plicated, and perfectly plain in course and treatment. Owing to their being imperfectly recorded, we know not whether they were deep-seated or superficial. Certain it is, that they ran their courses rapidly, and were opened early with entire relief to all the symptoms, and that rapid cures were the results. As there were no thoracic symptoms, and there were no physical signs recorded, we do not know whether or not any affection of the pleura, or lung, existed. The probability is that no examination was made of the chest, because usually no thoracic complications are anticipated in these cases. Moreover, the *frequent* occurrence of such complications has, I believe, never been brought distinctly before the profession until my paper, previously cited, was published. Of the remainder of the cases, viz: three, four, five, six, seven, eight, and nine, all had thoracic signs noticed on auscultation, although in some of them the auscultatory phenomena were trivial, and the patient had either very slight or no thoracic symptoms. In numbers three, five, seven, and nine, the rational were slight, but the physical were more or less unequivocal. In all of them the fact of the existence of thoracic physical signs was an important argument for the operation, on the ground that they proved that the inflammation was extending upward, and might, at any time, show itself by very serious thoracic result.

In number eight, death was threatened unless speedy relief from not only the complications on the side corresponding to that in which an abscess had begun below the diaphragm, but also because pneumonia was commencing in the other lung.

In number four, the perinephritic portion of the abscess was so contracted, owing to the discharge of its purulent contents through the lung, with symptoms which finally caused death, that I found it almost impossible to feel the lowest portion of its walls, under the deepest pressure in the renal region, and on pushing high up under the floating rib of the same side. In this case the thoracic signs, as in number eight, were the sole symptoms for which I was summoned in consultation. They masked all others, and had become in reality the most important, and alone called for treatment, and they were the chief cause of death.

In number six, long continued disease of a pulmonary character, with cough and purulent expectoration, has been the result, and even now, after months of illness, only a very slow recovery can be hoped for. Possibly, unless great care be taken, the patient may yet die in consequence of thoracic rather than of abdominal disease.

Still further, I assert that those cases in which auscultation alone revealed more or less serious auscultatory signs, while all rational signs of pulmonary or pleuritic disease were absent, were really quite as significant as others relatively to the prognosis and treatment of the affection, because they indicate that these thoracic difficulties may come on in an entirely insidious, really latent manner. They also prove to *every practitioner the necessity of auscultation, even when the symptoms point wholly to the abdomen. I lay particular stress on this point, because the fact of the existence of such thoracic signs should have* an important bearing on the treatment and

prognosis in every case of perinephritic abscess. It has been the reason for my urging more earnestly than I otherwise should have urged it, the early opening of a sub-diaphragmatic abscess *in all cases* falling recently under notice.

Second.—In regard to this advice of an early puncturing, or more free laying open of the abscess, all these cases fully sustain the proposition.

The cases may be arranged in three classes: 1st, those where the operation was plainly indicated, and gave immediate and great relief; 2d, those where the indications for operating were much less evident, — those in fact which modern surgery shrinks from, on the ground that the evidences of fluctuation and of pointing were wanting. Yet the symptoms were such as to call for boldness and promptness on the part of the surgeon — which treatment, when followed, was *always* crowned with success; 3d, those in which no operation was done upon the nephritic region, and evil results, either death or long disease, ensued.

In the first class may be ranged cases one, two. In these the pain, swelling, fluctuation, etc., in the renal region admitted of no doubt, and the surgeon with his bistoury gave instant relief.

In the second class, three, four, nine, we find those in which the tumor was deep seated, was not distinctly fluctuating, had not pointed, and generally presented none of the usual signs of a "ripe abscess," yet in all of them the operation was of great service.

In three and nine all serious symptoms disappeared

after the operation, although no pus was observed at the time, and the operators considered that their labors had been in vain. The result proved that they were mistaken, for in both instances a suppuration was induced, under which the original tumor gradually *melted away.*

In case five, although pus was found by the trocar, and a few ounces of a creamy consistence were pressed out, a large tumor still remained, and the patient continued to have purulent urine. But subsequently the tumor has somewhat subsided, and the patient has grown better under a seton, while the urine has become nearly natural under injections of warm water through a catheter; and all the pelvic organs, which had become very sensitive, have returned to a nearly normal state.

In the third class are the cases four and six, in which no operation was made in the nephritic region. Death occurred in case four, and long continued disease, with possible death by phthisis, may be the ultimate result in the other case, six.

The FINAL INFERENCES that may, I think, be legitimately drawn from these cases, and which will govern me hereafter in my consultations in regard to them, are as follows:

First. — Operate as early as possible after a distinct tumor is formed, and the other signs seem not to militate against the idea of inflammation being its cause. Especially shall I urge this measure as soon as a tumor forms in the renal or the iliac region, extending from front to the back, and which is large enough to be felt easily in those parts by two hands

placed one in front of the abdomen, and the other in the renal region. I shall urge this, even if there be none of the usual signs of actual suppuration, such as fluctuation, pointing, etc.

Second.—For a still greater reason shall I urge the operation in such circumstances, if there be any affection of the corresponding pleura or lung, even if the thoracic symptoms be slight; and, *a fortiori*, if those signs be manifest and severe.

Third.—In case there be little or no discharge of pus at the time of the operation, I shall advise the keeping the wound open, and that suppuration should be promoted either by a seton or by tents, etc.

Fourth.—I would urge this early opening of the abscess in the same way, and for a similar reason, that modern surgery directs the free opening of a felon on the finger, to relieve the unusual distension of surrounding parts, and to prevent serious burrowing of pus, and its getting into the peritoneum, bladder, or rectum, below, or into the pleura or lung above. Cases four, five, six and eight, fully sustain this position. I verily believe that an early operation in these cases would have saved much suffering, and even death. By this I do not mean to intimate that I think the perinephritic abscess and the felon are analogous entities, but simply that they resemble each other in proceeding beyond their original bounds and causing thereby great mischief in surrounding parts, and possibly death, and that therefore they ought to be summarily cut short, if it be possible to do so without danger. If ever there be occasions

for a *cautious boldness* on the part of a surgeon, these abscesses present them.*

In these remarks I have alluded only to the surgical treatment. Of course there is an earlier period which is more important, if we would at times check the complaint. Among the means to be used it is evident that absolute rest is needed. The patient should be kept in bed for one or more weeks until all inflammation is gone. The bowels should be kept regular, perhaps for a few days gentle laxatives would be of service. If much pain, leeches and blistering should be used, and laudanum applications, or fomentations of turpentine applied. Meanwhile the patient should be nourished with

* The whole subject of abscess about the peritoneal organs need this same character of caution, and yet boldness, on the part of practitioners. The whole class of pelvic abscesses, those from tuphloenteritis, peri-uterine and pelvic cellulitis, we have yet much to learn about, and among the items worthy of great attention, are the time and precise points at which such openings may be made. It seems to me that it is right to operate as early as possible in all. And there may be a question whether there is really any serious danger likely to arise from laying open the peritoneum in case an abscess *points* in any part. Certainly the danger seems to me to be not at all comparable with that arising to the health and the life of the patient, from allowing the abscess to remain unopened. If no opening be made, we have seen that it tends to burrow through all the cellular structure around, forming not unfrequently long sinuses or bursting into the intestine or pleura, in either case bringing long disease, and possibly, as a consequence, death. An abscess pointing in any part of the abdominal parietes presupposes, either, first, the peritoneum has been pushed away by the pus insinuating itself into the meshes of the connective tissue, or, second, that membrane has been pushed before it. In either case there can be no doubt that a certain amount of lymph has been effused around the point, so that the abscess is really in a cavity separated from the peritoneum. It may be urged, supposing a communication already existing between the intestine and the abscess, that there is danger of an artificial anus being the result of surgical interference. Yet in each and all of such cases I would advise an operation, on the ground that it would be better even to have an artificial anus, capable possibly of cure, than to die outright, or to have years of misery from sinuses, etc.

beef tea and beef juice, bread, milk, etc., some wine, nutritious enemata, and everything be done that is possible to prevent the lowering of the tone of the system.

How should the operation be performed? In the above cases the *bistoury* was used, and a free opening made to a certain depth in five (viz: one, two, seven, eight and nine), opening the abscess in four of them (one, two, seven, eight), while in the fifth (nine), neither by bistoury nor by the exploring trocar, subsequently passed in various directions, could pus be procured. In all, the operation was the first step toward cure, although in one (seven) severe secondary hemorrhage occurred.

In cases three and five, the trocar was used, but in both the subsequent keeping open of the wound was found necessary. In one (five) it was done by means of a seton three inches in length, and introduced ten days after the first tapping. In both the operation afforded relief, though in both it followed more slowly than in the cases where a freer opening was made. It seems to me that, as Trousseau remarks, the bistoury is the more dangerous, from its causing a liability to subsequent hemorrhage, as occurred in one of ours (seven), but it is more speedy, though perhaps not more effectual, than the trocar or seton.

Where should the opening be made? Of course where the tumor points seems the more rational spot. I have no hesitation in advising that the renal region be chosen in preference to all others, in case the tumor lies in part in that region. I ad-

vise this for the obvious reason that there is less liability of wounding the peritoneum than when operating more in front.

Appendix. — After the previous paper was prepared for the press, the following case terminated in this Hospital. It is eminently suggestive of painful reflection in its whole history, and supports, I think, the doctrines avowed in this paper. I trust that a brief allusion to it will not be deemed inappropriate as an apt illustration of the whole matter.

CASE No. 10.

Mass. Gen. Hospital, T. M., slater, aged 28, E. C.

1868. November 27. While at work on a staging was precipitated to the ground, a distance of thirty feet, striking, he says, his face and hands. Ecchymosis of the right side of the face and right eye. Complained of intense pain in the lumbar region, especially in the left and across the abdomen, on a level with the umbilicus. A small quantity of quite bloody urine removed by catheter. Patient walked from the carriage into the accident room, but with a decided limp. Warm fomentations to the abdomen. Cold water to face. Brandy ʒiss. Laudanum thirty drops.

During the remainder of the month, and up to December 31st, patient continued to grow worse in the local symptoms about the renal region. The hæmaturia was not constant, but at one time abundant. The pain was violent and required opiates for

relief. The abdomen was tympanitic, and very tender in the "region of the spleen and kidney."

On December 20th it was recorded that an unrestricted induration extended over the left lumbar and hypochondriac region, very tender on pressure.

On 29th there was an inclination to point in the left inguinal region, and there was very great suffering from distension of the bowels. An elastic tube was introduced into the rectum; much flatus was discharged, and afterwards a large quantity of pus and mucus, and a little fecal matter came away, at three separate dejections. Under these, the swelling in the inguinal region and general tympanites nearly wholly disappeared, and the patient was much more comfortable. Pus continued to discharge daily from the rectum, with improvement in the health, and the patient was discharged "much relieved," January 25th.

But he never recovered, as the following records prove:

On May 4th, 1869, he was admitted to the City Hospital. He was then suffering from cough and slight expectoration, and pain in the right chest. No appetite; bowels well; micturition free. The urine, examined once, was found alkaline; no albumen. Sp. G. 1011. The pulse was about one hundred. Fine crepitus at the base of the right lung.

Tincture of the muriate of iron, gtts. twenty drops three times daily.

On 12th, infusion of buchu. Iodine was applied locally.

Sinapism twice daily to back.
On 17th, ordered an expectorant mixture, p. r. n.
Sulphate of quinine, gr. iv. daily.

From this date till June 8th he continued about the same. The cough was frequent on 9th, with slight pneumonic character. The greater portion of the time he had a diarrhœa, relieved about the end of July. The pain was constant in the back. Standing especially caused it, and when lying it was chiefly in front of the thigh. There were crackling râles with lessened respiration in the lower part of the right lung. On 21st, 22d, and 23d, they were heard at bottom of both lungs. Slight systolic murmur over the aorta. The urine continued as above, with mucus in it. June 2d. Profuse night sweats. The pulse varied from ninety-eight to one hundred and eight. The treatment was quinine, — very soon omitted, — bitter tonics, wine and diarrhœa mixture, and oxide of lime, none with materially good effects. On June 7th, health reported as improving. But on 8th, severe pain again in the left lumbar region, and the bowels were costive, but diarrhœa soon returned. Pulse was once reported at eighty, small and weak. Opiates were constantly needed for pain and diarrhœa. Occasionally vomiting. On July 6th, a troublesome pain in the left groin was reported.

August 22d. In front of left thigh, two inches below anterior superior spinous process of ilium, at which crepitus has been previously recorded, there was an elevation of the integuments about one inch square, tender to pressure, fluctuating, moderately

painful always. No hardness or swelling of neighboring tissues. Renewed tendency to diarrhœa. Some nausea. Pulse ninety-two, losing flesh and strength. On September 20th he was transferred to the surgeons with reference to the possibility of operating.

The report by the surgeons was as follows:

A tumor, tympanitic, disappearing on pressure, painful and gurgling, was felt; it was diagnosticated as "Psoas Abscess." Phthisis was also considered as existing, with a diarrhœa, controlled only by opiates. The other signs continued, and he gradually sunk and died, nine P. M., on 19th October, having been unconscious twelve hours; and after an illness of nearly eleven months.

Autopsy by Dr. Webber, twelve hours after death. Tuberculous deposit at the apex of the left lung. Cavity in the right upper lobe as large as a walnut; tuberculous deposit around it. One of the aortic valves had a fine network along its outer margin. Left kidney small, and adherent to the wall of an abscess. There was no evidence of any former fracture of it, and its structure was normal. Rectum contained a few ulcers. Two feet from anus was an opening through the intestinal wall, communicating with the abscess. Mesenteric glands tuberculous. In the left iliac fossa was a large abscess, half the size of the first. From this pus had burrowed down under Poupart's Ligament into the thigh, five inches from the anterior superior spinous process.

Remarks.—The above case is a very significant

one. If the ideas sustained in this paper be true, there may be a serious question, if a puncture had been made at an early period of the disease, when pointing took place and before the fistulous opening into the intestine, 1st, whether a fatal result would not have been prevented; nay more, whether a perfect cure would not have been effected; or even supposing an early death in consequence of an operation, whether that would not have been preferable to the long-continued disease and death by phthisis in the end. Finally, it may be questioned whether, supposing an artificial anus had been produced, modern surgery could not have relieved it, or at least afforded many chances of relief.

These questions force themselves upon us in the light of all the cases presented. The golden opportunity was lost of opening when there was pointing and great pain and tympanites a few days after the accident. It was not done, and then came the fistulous opening above the rectum, and partial relief, but subsequently followed by long months of illness, the burrowing of the abscess down into the groin, simulating psoas abscess, the gradual undermining of the health, and phthisis finally as a combination of the whole.

I knew a case almost identically the same in cause and result, which took place in a young lad who had a tuphloenteritic or pericœcal abscess. In this, as in the preceding case, no operation was performed. In fact it would perhaps have been impossible to do so, because the local tumor was never distinct. A fistulous opening into the intestine,

with subsequent phthisis and lung disease, and final death, were the result.

In all my previous arguments, and in the facts stated, the question has been in reference to perinephritic abscesses. But it may well be asked whether similar principles do not hold good with reference to any abscesses in any part of the abdomen in which the tumor is distinct and especially if it be prominent. The whole class of pericœcal and tuphloenteritic abscesses are particularly worthy of being investigated as to the question upon the propriety of making a free external opening with some dangerous result as possible, or of allowing the patient *usually to die* without an operation. I am glad to see that that eminent surgeon, Willard Parker, of New York, urges an operation* in cases of tuphloenteritis. The purport of his admirable paper, I think, fully sustains me in the following opinions:

1st, that abscesses about the peritoneal cavity tend usually either to death or long-continued disease, unless, 2d, an earlier operation be done than the usual rules of surgery will at present allow.

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* New York Medical Record, March 1, 1867. Also, Dr. Burges' case, same Journal, June 1, 1867.

ARTICLE II.

ON EXCISIONS OF JOINTS.

BY DAVID W. CHEEVER.

THE larger joints have been excised by the surgeons of the City Hospital, during the past five years, *twenty-eight* times, with the hope of saving limbs. Of these operations, *ten* were on the elbow, *one* on the wrist, *eleven* on the hip, and *six* on the knee. The shoulder and the ancle have not been formally excised. We have therefore enough material to afford profitable comparison and study. And, since the excisions of the upper extremity have become much more established in reputation, than those of the lower, we propose to devote most space to the latter. We shall, however, take them in regular order. Taken as a whole, the ratio of mortality of the excisions was .43 per cent.

THE SHOULDER.

No cases of injury or disease were such as to demand formal excision of the *shoulder*. Amputation at this articulation was usually the only resort

left in the severer compound fractures of this region. And in the cases of disease of the humerus, the joint surface was not affected. Large sequestra, involving the whole thickness of the shaft of the humerus, were removed several times, but the disease had stopped at the junction of the diaphysis and epiphysis, and the latter was left untouched. In one case, only, we found disease involving the cancellated structure of the head of the bone, and were enabled to remove the whole inner surface with the gouge, without opening the joint, thus leaving only a shell of bone and articular cartilage to represent the rounded head of the humerus itself. This case made a good recovery.

THE ELBOW

was excised ten times; for spontaneous caries four times, and for compound fracture six times. The ratio of mortality in all was .20 per cent. But a very marked difference existed in favor of the excisions for disease. Of these none died; while of the traumatic excisions one-third were fatal. Three out of four of the pathological excisions recovered without amputation; but one-half of the traumatic excisions were amputated subsequently.

The average duration of convalescence was eighty-five days.

The three successful pathological excisions were for caries; and aged three, eleven, and thirty-eight years. All made excellent recoveries, having good motion, and no sinuses. The accompanying engrav-

EXCISIONS OF ELBOW.

New Eng. Lith. Co. 101 Summer St. Boston

ing of the two older ones, is from a photograph taken as they were about leaving the hospital.

The fourth case was excised for scrofulous caries of long standing, and resulted in amputation. This unfortunate girl returned to the hospital the following year, with caries of the elbow of the remaining arm. Every effort was made to secure a spontaneous cure by anchylosis in a flexed position, rather than to subject her to the risks of a second excision, which might result in leaving her mutilated and helpless.

The two successful cases of traumatic excision were primary operations, at the ages of thirteen and thirty years; recovery taking place in sixty-three, and one hundred and thirty-four days, respectively. The four unsuccessful cases were complicated with other injuries, with sloughing, or delirium tremens.

THE WRIST

was excised once, for spontaneous caries. The patient was a young man of twenty-two years. The joint had been very extensively diseased for seven months. The choice was between excision or amputation. Longitudinal incisions were made on the back and the front of the carpus, and all the bones removed, except the *trapezium*.

For awhile everything went on well. The hand and arm improved very much, and many sinuses closed. At the end of ninety-eight days, the patient died of uræmia, consequent on a gunshot wound of the kidney.

THE HIP

was excised for coxalgia, *eleven* times. Two were adults, and nine were children. Seven recovered, and four died. The ratio of mortality was .36 per cent; but among the nine children, only .22 per cent.

Both the adults died; and we find it stated on good authority*: "In excision of the hip, very few cases are on record in which the patient has survived, if the operation has been performed after puberty. Successful cases are almost confined to childhood." In Dr. Hodges's table, out of twenty-eight adults, only seven recovered; and in two of these, the recovery was not permanent.

Of our two cases, one died of Bright's disease, and the other of prolonged suppuration.

We propose, therefore, to eliminate these two cases in considering excision for hip disease, and to confine our attention to the nine cases of children, whose detailed history we here subjoin.

EXCISION OF THE HEAD OF THE FEMUR, FOR MORBUS COXARIUS.

Case I. (Service of Dr. Buckingham.) Feb. 12th. Frank, æt. 14, of scrofulous parentage, was healthy until last September, when he began to have pain and stiffness in left hip. Soon after, had an attack of fever lasting three weeks; was confined to his bed thirteen weeks, being much reduced, with

* "Holmes on Surgical Diseases of Children."

night sweats and emaciation. During this time an abscess was opened below the trochanter major, and it has ever since discharged pus freely, with, occasionally, small fragments of bone. He has grown feeble, pale, and thin. Appetite good. No cough. The thigh is held persistently flexed. The nates are flattened, and there is a good deal of swelling. Great pain on moving the limb.

He was put to bed; extension by weight applied, and the syrup of iodide of iron given.

March 14th. Extremely pale, thin and exhausted, with diarrhœa, hectic and suppuration. Appetite, however, good.

The patient became so excessively reduced that it seemed an open question whether he would survive more than a few days. It appeared very doubtful whether it was expedient to interfere with the apparent course of this disease to a fatal result. Nothing could be done, unless by operation. Without interference, he was slowly sinking. After weighing well the probabilities of the course to be pursued, Dr. Buckingham determined to give him the benefit of the only doubt which presented itself, and, with his consent, to cut open the joint and remove the diseased bone, or so much of it as might be practicable.

Operation. — March 15th. After etherization, an incision, V-shaped, point downwards, was made over the joint. The muscles were dissected away from the great trochanter; the chain saw was passed beneath, and the femur sawn through, just below the trochanter. The head of the bone was now seized with heavy clawed forceps, the muscles dissected

back from the acetabulum, the capsule opened, and the head and neck of the femur removed. The ligamentum teres had disappeared, but the head was not dislocated. The head of the femur was extensively eroded. The acetabulum was carious, and a few loose pieces were removed. The hemorrhage was slight; some small vessels were tied, and the wound filled with a sponge. Stimulants and morphine were given. After the operation, the pulse was one hundred and forty, and very compressible. One hour later, pulse one hundred and fifty, and weaker. Ten drops of tincture of opium were given in milk.

In the afternoon, a Smith's anterior splint was applied, from the toes to the abdomen, keeping the leg quiet. At six P. M., pulse one hundred and fifty; sleeping. Milk punch was ordered during night.

March 16th. Pulse one hundred and forty. Much irritative fever.

19th. Pulse same, but he looks better. Granulations appearing.

24th. Wound measures four by five inches. It is filled with healthy granulations. General condition improving.

31st. Appetite better. But little pain. Wound discharges healthy pus. Appearance of countenance better.

It was now, a fortnight since the operation, evident that he had rallied from the shock, and was going on favorably. Improvement was, necessarily, excessively slow, and could be measured only by months.

April. The wound continued to close.

May. He improved, but suffered much from bed-sores, being very emaciated.

June. He was put into a basket, and taken out of doors daily, — and from this time a very marked improvement began.

July. He was encouraged to use a little passive motion of the legs daily. The wound was closing; a fragment of carious bone was discharged.

On the 20th, the limb was somewhat stiffened, and examination showed that the work of regeneration had begun.

August. He steadily gained, until the 27th, when he was discharged; five months since the operation, and one year since the beginning of the disease.

At this time his condition was as follows: — Face round, fat and sun-burned. Appetite excellent. No hectic, nor sweats. Very slight discharge from wound of excision, which has nearly closed. Bed-sores healing. Has gained flesh. Both knees crippled by false anchylosis, owing to long flexion. Passive motion of them, however, is improving daily. Moving the hip gives no pain.

His ultimate recovery seems no matter of doubt. He was so near death at the time of the operation, that great fears were expressed whether he would survive it.

Two years later, he was seen walking with a cane.

Case II. (Service of Dr. Cheever.) Martha, aged six years, entered the hospital Feb. 23, 1867, with the following history:

Nearly a year before entrance, she complained of pain in the knee, followed after a time by pain in the hip, which increased to such extent that, in November, 1866, six or seven months after the first attack, she was no longer able to stand upon the affected limb, and was confined to bed most of the time. She had always had a feeble constitution, and at the time of admission was very delicate. Her mother had died of phthisis.

On entering the hospital, the right limb was continually adducted, the toes being inverted, and the slightest efforts at abduction giving pain. There was no appreciable shortening. Bowels constipated, and appetite variable.

Until March 1st the patient remained in bed, with extension by a five pound weight applied.

℞ Olei morrhuæ, ℥ ss. t. d.

March 1st. Sayre's splint adjusted. Sat up three hours.

March 15th to May 7th. Extension continued, without decided beneficial effects. Sayre's splint adjusted again May 7th.

20th. The hip was so excessively sore that the splint was kept on only about a week. The joint seems more tender, and the deformity is increasing. The head of the femur is out of its socket, and the two contiguous surfaces are rough and denuded.

The question of performing the operation of excision of the head of the femur was now seriously considered. Three months of rest and extension had been productive of no benefit. Were it possible to

have the patient treated by a long-continued expectant method, and under the best hygienic influences, the case might be fairly left to nature, and recover ultimately with anchylosis. On the other hand, the circumstances of the child's friends rendered it impossible for them to take care of her, and carry out treatment. Abscess, sinuses, and perhaps death, must be an early result of letting her walk round, and of neglect.

Under the circumstances, it was not deemed precipitate to operate, even though no evident abscess existed.

A V-shaped incision was made over the trochanter major, the apex pointing downwards. The head of the femur was found to be denuded over almost its entire surface, and the disease extended to the brim of the acetabulum. The head of the femur rested on the upper and outer lip of the acetabulum; and about two drachms of pus were found around the joint. The cup of the acetabulum was filled with fungous granulations, and not carious. The diseased portion of the ilium was left to exfoliate. The femur was sawed by means of a chain saw, below the trochanter major, and a piece removed an inch and a half long. The cancellous structure was found to be very soft. Some of the adjacent softened and degenerated tissues were removed, two ligatures were applied, and the wound left open. There was very little hemorrhage. Patient was placed in bed, on her left side, without apparatus. Evening. — Pulse one hundred and forty, regular. Very little pain.

June 5th. Patient feels bright and playful. She

takes milk freely. There is no vomiting, and no pain in wound. Patient altogether as comfortable as before operation.

6th. Sleeps well at night. Cheerful during day. Pulse one hundred and forty. Strength fair. Tongue furred and moist. Wound has commenced to suppurate.

9th. Patient has had so little pain that only one or two opiates have been required since the operation. The wound is clean.

July 5th. Sits up in a chair, and stands on sound limb. Is able to move about the bed. Wound three inches by three-quarters of an inch.

30th. Patient has some power of motion in the affected limb. Is beginning to walk on crutches.

Aug. 2d. Very comfortable. Walks about the ward a little with crutches, and can bear considerable weight on the foot.

15th. Walks with crutches very smartly, bearing some weight on the right limb. Can stand without support. No pain on motion of leg. Wound nearly closed, and no dressings required.

Sept. 3d. Patient can walk without crutches, but with a limp. Can nearly bear weight of body on affected limb. Health and strength improving. Wound almost closed. No pain or tenderness about hip. Shortening of right limb, *one and a half inches.* She was discharged three months after operation.

In December (having been operated on in the previous June) had been without a cane, going up and down stairs, etc. She had been allowed to go to school. The wound remained closed and free from

pain until three weeks ago, when an abscess opened in the seat of the operation, and is now discharging. On examination, there is no denuded bone to be felt. Whether this abscess is due to natural causes, to changes of temperature in going out, or to a blow she received in playing, we cannot say. It seems certain that she will perfectly recover in time.

1869. Two years since operation, condition as follows: — Walks freely without a cane, and with a thick soled shoe. A little serous oozing from one spot only.

These two cases were in striking contrast with each other. In the first, the disease had advanced to the limits of endurance, and the patient was hanging between life and death. In the second, the joint was excised before an abscess of any magnitude had formed. Both cases resulted favorably.

Case III. (Service of Dr. Cheever.) Mary, aged six, entered hospital Nov. 1, 1867, with pain in right knee, which had existed for six months. Examination showed that the right nates was flattened and the limb shortened; that flexion and rotation of the thigh upon the pelvis increased the pain, but gave no crepitus. Treated by rest in bed, and extension of three pounds. At the expiration of a month she had improved, flexion and rotation causing but slight pain. At the sixth week, however, she began to complain of pain in the knee when moved, so that it was difficult to re-apply the bandage.

At the third month, she was comfortable when quiet, but the slightest jar or movement gave severe

pain. Examination was made under ether, and a slight crepitus was detected in the hip-joint. No marked change during the following month.

Feb. 4th. Appetite failing for several days. Comfortable with extension.

14th. Restless at night. Pulse weak. Appetite poor. Moderate pressure over trochanter gives severe pain.

28th. Failed gradually since previous date, and, under the circumstances, it was thought best to perform an operation for excision of the head of the femur.

Patient etherized, and a V-shaped incision made over the trochanter major, the apex pointing downwards. The capsule was divided by a sweep of the knife, and the head of the femur thrown from the socket. It was found to be diseased over a greater part of its surface, and the brim of the acetabulum denuded one-third of its circumference. About three drachms of pus escaped from the joint. The femur was sawed with a chain saw, just below the trochanter major. The cancellous structure was found to be very firm, and the periosteum in good condition. The carious portion of the acetabulum was left to exfoliate. There was but very slight hemorrhage, and no ligature required. The flap was strapped back upon the dorsum of the ilium, the wound being left open. Patient was placed in bed upon the left side, and the leg placed upon a pillow.

Evening. Slept most of the afternoon, in semi-recumbent position; looks cheerful, and says she has no pain. Wound dressed with dilute solution of carbolic acid.

Feb. 29th. Slept well all night, and is bright and cheerful. Wound kept open and filled with the carbolic acid wash, and covered with a compress. Appetite good. Pulse one hundred and thirty.

Evening. A comfortable day. Has not required an opiate since the operation. The wound looks clean and healthy. No hemorrhage.

Remarks. — In this case, it will be noticed that there was apparent amelioration of the symptoms under treatment by extension, but that no real change took place. The disease progressed to the formation of pus, and to caries and partial absorption of the head. Absolute relief from pain was given by the operation, and it was followed by no constitutional shock.

This child had several relapses, and abscesses up and down the thigh.

She is now, eighteen months since the operation, able to walk about freely with crutches; the sinuses are not closed. She is a very feeble, scrofulous child.

Case IV. (Service of Dr. Cheever.) Willy, aged five. This patient was admitted to the hospital in October, with pain in the knee, limping gait, flattening of the nates, and slight tenderness about the hip on pressure. The opposite side of the pelvis was tipped up, and the affected leg was apparently an inch longer than the other. He was put to bed, and extension with three pounds applied. He continued very comfortable, and seemed at first to improve under treatment. After he had been in the hospital

three months, he complained of more pain on moving the limb, and had considerable constitutional excitement. He was examined under ether. On moving the hip, rough grating was very plainly felt, and there was increased motion of the head of the femur, so as to allow it to slip partly from the acetabulum. Much constitutional irritation, with pain and vomiting, followed the examination.

Three days later, patient having been etherized, a V-shaped incision was made, bringing the point of section just below the trochanter major. The flap was then dissected up and the trochanter exposed. After dividing the muscles and capsule by a sweep of the knife, the head of the bone was thrown from the acetabulum, by rotating the leg. The head, neck, and part of the trochanter major, were removed by a chain saw. A small portion of the acetabulum was found diseased, but not gouged. About half of the cartilage of the head was destroyed. There was very little hemorrhage, and only one vessel was tied. On the night following the operation, he slept better than for a fortnight previous; and the next day was bright and cheerful, and free from pain. Aside from a slight disturbance, with loss of appetite, coated tongue, and pain, coming on a few days after the operation, and probably due to an attempt to close the wound too quickly, he has done perfectly well. It is now three weeks since the operation. He is quite comfortable. The wound is granulating finely and contracting rapidly. The end of the bone is covered, with the exception of a small piece. Can bear extension with three pounds without pain. General condition improving every day.

Three months later. The wound in the hip has almost closed. There is no discharge of pus, and only moisture enough to cover the granulations. He can swing and turn the leg in all directions. He goes all over the building on crutches, ascending three flights of stairs. He can stand without crutches. There is never any pain or hectic. There is about *an inch and a quarter* of shortening. His future condition seems promising, and worthy to be noted.

Eighteen months since operation. Every way improved: a little serous discharge still.

Case V. (Service of Dr. Cheever.) Tommy, six years of age, of feeble constitution, had suffered the symptoms of hip-disease a year before his entrance to the hospital, and during the previous three months he had been wholly disabled from walking. There were the characteristic pain in the knee, flattening of the nates on the affected side, tenderness over the joint, wasting of the limb, and pain on motion; and manipulation gave a sensation of grating in the joint, although there was no fulness over the joint or sinus indicating the presence of pus.

The operation of resection was performed, under ether, as follows:—A V-shaped primary incision was made over the great trochanter, the apex of the wound being directed downward. The flap was reflected upward, the dissection being carried down to the bone. The ligaments of the joint and the tendinous attachments having been divided, and the head of the bone, by forcible rotation, having been

thrown out of the acetabulum, a chain saw was passed around the bone, just below the greater trochanter, and a section made. The head of the femur thus removed was found extensively diseased, the cartilage ulcerated and eroded, and the bony tissue carious. Half a fluid ounce of pus was evacuated. Considerable hemorrhage attended the operation, four vessels requiring ligatures. The wound was left freely open, the flap being confined upward by adhesive plaster.

The subsequent treatment was directed to the support of the patient, and to the promotion of the healing of the wound. Healthy suppuration developed on the third day. The wound was freely syringed with warm water twice daily, and with diluted Liq. Sodæ Chlorinatæ (ʒiij. to Oi.). After twenty-six days, the wound had so far healed (the flap having been gradually drawn downwards in the process) that extension by pulley and weight (one and a half pounds) was applied, and the limb straightened without discomfort. After two weeks the weight was increased to three pounds, the extension being omitted at night. The wound continued to heal satisfactorily, and the general condition improved in a marked degree. Motion of the limb is now, five months since operation, quite free and almost painless, and the patient will shortly use crutches.

Sept. 1869. Nine months since operation. Walks without support. No sinus.

Case VI. (Service of Dr. Cheever.) Andrew,

aged eight years, presented himself at the hospital in a very pitiable condition in January last. He was, at the best, of poor constitution; and bad hygienic surroundings, insufficient diet, and, especially, the exhausting conditions of his disease, had reduced him greatly. He had suffered from the symptoms of hip-disease three years; and during a number of months had been confined to his bed. The abscess in the joint had made a spontaneous opening in the middle third of the thigh, on the anterior aspect, and was discharging profusely. Decubitus was on the sound side, with the knee of the affected limb in constant flexion. Emaciation was extreme, and the appetite was poor.

Excision of the head of the femur was performed as in the last case, the section being made just below the trochanter major. The articulation was in a condition of extensive caries. The head of the femur was much broken and was partially absorbed. The cartilage of the acetabulum had ulcerated and was nearly lost, and the bone at the deepest point of the cavity had given way, so that the pelvic fascia could be felt as an elastic partition. There was a considerable amount of laudable pus in the joint, to which the free incisions of the operation gave full exit. A seton was passed along the sinus in the thigh, connecting the wound with the spontaneous opening. The hemorrhage attending the operation was slight. The wound was left open, with cold water dressing.

On the second day after the operation the general reaction began, which marked the beginning of a

recovery so soon as the diseased joint was removed. The appetite commenced to improve; no opiate was required at night, as had been previously the case. The wound took on healthy action almost at once; on the fourth day the end of the femur had nearly disappeared beneath the granulations. With cod-liver oil, and attention to the diet, the wound, and the general condition, improvement has been rapid, so that now, nine weeks after the operation, the patient has gained one-half in weight; his wound is closing fast, with diminishing discharge; the motion of the limb is free and voluntary, and the prospect of recovery good.

Six months later; still fistulæ and abscesses over the femur. Confined to bed.

Case VII. (Service of Dr. Cheever). Maggie, aged seven, began to suffer from disease of the hip four years ago. After six months a spontaneous cure appeared to have been effected, and there was cessation of the pain, lameness and general disturbance which had previously existed. An interval of nearly a year of health followed, in which there were no signs of active disease, local or constitutional. At the end of that respite the affection recurred, with increased severity. Without fully disabling the child, the disease developed until seventeen months before her entrance to hospital, when an abscess appeared on the inner side of the thigh, in the middle third; it opened spontaneously, and discharged freely during four or five months. It then closed, and the disease remained partially latent until December last,

two months before she was brought to the hospital; at that time the former symptoms recurred, and the patient at her entrance was confined to bed, emaciated and debilitated. Motion of the hip was not notably impaired, but was painful, and under ether gave moderate grating. The limb was shortened one inch. The nates of the affected side was flattened, the region over the trochanter major being considerably swollen. The sinus was open and discharging moderately; and a probe, passed through it in an upward course, impinged on the denuded neck of the femur.

Excision of the head of the bone was performed as in the other cases, the only modification being that the section of the bone was made through the trochanter instead of below it. The head of the femur presented appearances corresponding with the course of the disease. Nodules of new bone had been thrown out in front and laterally, in the natural attempt at cure. In the intervals between these the bone was still carious and undergoing the process of waste. The cartilage of the acetabulum was partially ulcerated and eroded.

Convalescence commenced at once, the wound beginning to take on healthy granulating action very early. There was very slight constitutional disturbance. The chief difficulty experienced was in the tendency of the trochanter, which had been left in the wound, to ride outward and protrude. This was obviated by the application of extension after four days, the weight being one pound and a half. The tip of the process exfoliated, and the extremity of the

bone soon became buried beneath the healthy granulations. The progress toward cure was satisfactorily rapid, under mild dressing to the wound, and cod liver oil internally; and now, after seven weeks, the patient is in excellent condition, able to sit up in a chair without discomfort, and promising a safe and early recovery.

Six months later, walking extremely well; sinuses closed. Two inches shortening.

Case VIII. (Service of Dr. Cheever.) Honora, aged eight years, of phthisical tendency, traced the symptoms of hip-disease to a fall two years before her entrance to hospital, where she presented herself for treatment. She was in very poor condition, emaciated, with delicate appetite and little strength. The symptoms referred to the diseased hip were characteristic; there was pain, flattening of the nates, partial obliteration of its fold, grating on motion, and pain in the knee. Extension of five pounds afforded partial, temporary relief. After ten days of this treatment the head of the bone was excised. The subsequent relief was marked and immediate; the wound soon granulated healthily and discharged freely, and the general condition improved under good diet, tonics and cod liver oil. There was, however, less rapid improvement than in the previous cases; the wound, although healthy, was indolent in healing. After six weeks, extension was applied, with a weight of three pounds. There was gradual improvement until the tenth week, when nausea, loss of appetite, and general depression succeeded from

some ill-defined cause. The patient complained of headache and weakness. There was diarrhœa, which soon gave place to obstinate constipation. A tendency to sleep developed. The pulse reached one hundred and continued at that point. Soon the latent mischief developed itself, and well-marked symptoms, convulsions, headache, emaciation, delirium, stupor, pointed to tubercular inflammation of the meninges. The patient sank steadily; and, after a succession of distressing symptoms, died at the end of the tenth week after the operation. No autopsy was obtained.

Case IX. (Service of Dr. Cheever.) David, aged four, entered the hospital after having had symptoms of disease of the hip two years. The patient's condition at the time of entrance testified to the wearing effects of the affection; he was debilitated, confined to his bed, and was of very irritable disposition. The limb was shortened half an inch; and when the patient was etherized there was very slight grating in the joint. In the outside of the middle third of the thigh was an opening, communicating with a subcutaneous sinus, which extended up the thigh toward the joint, and discharged freely. The slightest motion of the limb excited great pain.

An exploratory incision was made, its shape being that for excision, it having been determined to proceed with caution, on account of the obscurity of the symptoms, and because, also, the probe, when introduced into the sinus, failed to detect dead bone in

the region of the joint. As soon as the cut was made, pus freely escaped; and the probe found denuded bone. The incision was enlarged and the flap dissected back, and in the bottom of the cavity of the socket was found the head of the femur, spontaneously separated. The adjacent extremity of the bone was rounded and undergoing repair.

For three weeks after the operation, the general condition of the patient improved to a marked degree. The discharge from the healthily granulating wound was abundant and laudable. Although the appetite was fair, the nervous system remained weak and irritable. Extension with a weight of one and a half pounds was applied. But he gradually emaciated and failed, without very marked symptoms, and subsequently died of tubercle.

We have detailed, above, *nine* cases of excision of the head of the femur, in children. Of these, two died.

One child, of tubercular meningitis.

One child, of tubercle.

Five of these children are walking very well; one walks with crutches; and one is still in bed.

It is too soon to deduce positive experience as to the result in these cases. One thing we conceive to be demonstrated by them, viz: that the shock of the operation is small, and that the relief, from giving free exit to pus and caries, is as great in this disease as that experienced after the opening of an acute abscess.

Excision of the hip for disease, as compared with

that for traumatic cause, seems even more favorable than excision of the elbow, excision of the diseased hip giving $36\frac{3}{10}$ per cent of deaths; while of excisions for gunshot wounds, before the American war, we had a mortality of $91\frac{2}{11}$ per cent, and in the armies of the United States, $87\frac{1}{2}$ per cent.

The statistics of all the cases of excision of the hip for caries, operated on since 1860 (one hundred and twelve in number), as given by Dr. Good,* furnish the following ratio of mortality by countries:

France,	85.71	per cent.
Russia,	66.67	"
Germany,	64.71	"
America,	44.83	"
England,	34.37	"

And in considering the *résumé* of all those who have published tables, we find but slight difference among authorities.

The ratio of mortality, according to

Fock,	is 36.30	per cent.
Barwell,	is 36.37	"
Eulenberg and Sayre,	is 36.60	"
Le Fort,	is 41.00	"
Lyon,	is 43.90	"
Giraldès,	is 45.13	"
Heyfelder,	is 47.62	"
Hodges,	is 47.74	"
Good,	is 52.29	"
Cheever,	is 36.36	"

* "De la résection de l'articulation Coxo-femorale pour carie," par R. R. Good, M.D. — Paris, 1869.

Of the operations since 1860, this abstract gives the names and success of those who have operated repeatedly:

Sayre,	11	times;	7	recoveries;	4	deaths.
Bardeleben,	9	"	3	"	6	"
Holmes,	8	"	4	"	2	" (2 uncertain.)
Giraldès,	7	"	0	"	5	" "
Langenbeck,	7	"	1	"	4	" "
Barwell,	5	"	4	"	1	"
Krackowitzer,	5	"	1	"	4	"
Gant,	4	"	4	"	0	"
Simon,	4	"	2	"	2	"
Gosselin,	3	"	0	"	3	"
Lee,	3	"	1	"	0	" (2 uncertain.)
Hulke,	3	"	2	"	1	"
Cheever,	9	"	7	"	2	" (2 incomplete.)

"If we wish," says Mr. Holmes,* "to look accurately at the results of excision of the hip, we shall not be content with the common rough classification into death and recovery. Many of the deaths are unconnected with the operation; and in many cases, though the patient recovers, the operation fails.

"I think a fair classification for practical purposes might be made by separating the deaths into those who die from the direct results of the operation, and those who sink from constitutional causes; and the recoveries into those in whom the wound entirely heals and the limb is perfectly useful; those in whom the limb is useful, but the wound remains open for an indefinite period, and those where the patient recovers, but with a more or less useless limb and

* Op. Cit.

open wound, — in fact, relapses into much the same state as we usually find in chronic hip-disease."

According to this classification, Mr. Holmes tabulates his own cases as follows:

Nineteen cases of excision in children.

6 died from the direct effects of the operation.
1 died after operation from previous effects of the disease.
1 died of independent disease.
2 recovered from the operation, but died a long while afterwards.
2 were little, if at all, benefited.
1 (twice excised) was doubtful.
3 have useful limbs, but with sinuses.
3 recovered completely.

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In justice to Mr. Holmes it should be added that he has operated only as a last resort in advanced stages of the disease; and, also, that an epidemic of pyæmia swept off *five* of his most promising cases.

In our own cases, operated on in all stages of the disease, and many of them comparatively early, though never before grating in the joint could be detected and pus had formed, we have the following results:

Nine cases of excision in children.

0 died from the direct effects of the operation.
2 died after operation, of tuberculosis.
1 has, as yet, a useless limb, like chronic hip-disease.
3 have useful limbs, but sinuses.
1 has a good limb, but has been lost sight of.
2 have recovered completely.

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2 adults died of Bright's disease, and exhaustion.

11 cases.

Average duration of convalescence, three hundred and twenty-eight days.

To classify them, for convenience, by name —

Martha, Willy, Tommy, and Maggie walk well, and without support; two have sinus over the end of the femur ; two are quite closed.

Frank was seen walking ; but is lost sight of.
Mary walks with crutches ; several sinuses.
Andrew is in bed with abscess and sinus.
Honora died of tubercular meningitis.
David died of tubercles in the mesentery.

Nine cases; mortality, *twenty-two* per cent.

The accompanying photographs of "Martha" were taken in October, 1869, twenty-eight months after operation.

As Mr. Holmes says, "The results will vary according to the kind of cases operated on. If the surgeon restricts the operation to the most curable cases of confirmed disease, he will obtain a good percentage of successes; but the question will remain whether the same success might not have been obtained by the expectant method. If, on the other hand, he operates only on cases where spontaneous cure is impossible, then his tale of successes will be much less; but then all the successes must be reckoned as clear gain. I have myself never proposed the operation in any case where there was any reasonable probability of recovery."

On the other hand, we have often operated early, with good results; and we have never regretted

having operated so early. The excessive mortality of the French tables admonishes us not to wait too long.

What are the probabilities of spontaneous cure? In Paris and London, small; but, with us, very considerable.

The author of the "Surgical Diseases of Children," says of London:

"I have no hesitation in saying that, in circumstances such as those in which the children of the London poor are placed, recovery from disease of the hip-joint hardly ever takes place after the disease has passed into the stage of caries of the bone, accompanied by abscess. Not that the disease is in itself incurable, even at this stage; nor that a few exceptional cases of recovery do not occur, even under the given circumstances; but that they are so very few as hardly to affect the general result."

And again, "When considerable and long-continued suppuration has set in, when the bones grate upon each other, and the child begins to lose flesh and appetite, recovery is improbable under any circumstances; and in the case of a poor child in London, almost impossible."

Such is not the case with us in America. Whether due to superior comforts in living among the poor, to climatic influences, or any other cause, certain it is that spontaneous recoveries after abscess and dislocation are not uncommon. We can recall quite a number of cases, under our own observation, where good power was regained in the limb, and the child grew up well; and although usually deformed, yet nature sometimes accommodates herself surprisingly

to shortening and a false joint. Certainly every physician must have noticed, in the community around him, the very considerable number of adults who have gone through the "spontaneous cure" of hip-disease.

This they have passed through in childhood; for when caries of the hip-joint attacks adults, we think they more frequently die than recover.

Hip-disease among the young we do not regard as a necessarily, or even probably, fatal disease. Hence, in patients in good circumstances, who can command comforts for the invalid, we should not be disposed to give an unfavorable prognosis as regards life; and even should think that there were some hope of a real cure without operation,—a cure which would amount to an arrest of the morbid processes,—if treatment were begun early. For this reason we regard the operation of excision, among well-to-do private patients, rather as a last resource from prolonged suppuration, caries, and hectic fever. Yet where it is to be done, as a successful operation, we are convinced that it had better be done early in the disease than late. Therefore, we advise early operation among hospital cases, as soon as we feel sure of caries, as indicated by grating in the joint, or abscess.

For poor children, if treated by palliative means, as rest and extension, in the hospital, who must be sent back, sooner or later, to the wretched surroundings where they contracted the disease, and from which they were taken, going back with the disease not removed, a relapse is certain and aggravated; whereas, by excising the diseased head of the femur,

we do away with the seat of the trouble, and give a better chance for recovery.

In the operation we imitate, on a larger scale, what nature constantly strives for, namely, to cast off and absorb the diseased bone. We expedite her processes; we make a large, free, and single opening in place of several tortuous sinuses; we establish an issue which cannot close until the parts below are sound; and we get rid at once of the carious head of the femur, which is the centre of diseased action. We thus shorten the period of invalidism in poverty, and assure the child a better hope of recovery.

To sum up for a moment:

1st. Hip-disease is far from always fatal.

2d. It is amenable to palliative treatment, if begun early.

3d. Excision, then, among the better classes of patients, should be practised sparingly, and as a last resort. But,

4th. Among hospital cases, a different rule applies; and excision should be resorted to as soon as caries is certain, in order to give the patient a quicker recovery, and a surer drainage when he leaves the hospital. And,

5th. The operation itself, as an operation, will be much more successful if done early in the disease.

In the child, excision of the hip is not a dangerous operation. Neither is it followed by any considerable shock.

In every case of our own, the child was better the day after the operation than he was the day before it. It seemed as if a load had been removed. Pain ceased and hectic diminished; and we saw the same

sort of elastic recoil of the vital powers, that we sometimes witness after removing a foul and diseased limb, or a painful tumor.

As an operation, also, it is a trivial one as regards difficulty, hemorrhage, etc. The bone is often spontaneously thrown out of the socket; it is always loosened, at any rate. It does not lie very deep then, and it is easily removed.

Excision of the hip results in the same amount of shortening that we get in the spontaneous cure by dislocation on the dorsum and a new socket. We are not liable to have such an arrest of growth after excision of the hip as after excision of the knee, since the major part of the growth of the femur, in length, occurs at the junction of the shaft with the lower epiphysis, near the knee. We get a much more free joint after excision than after spontaneous cure. The foot can be everted and moved in all directions, which it cannot be after dislocation on the dorsum. There is also much less danger of relapse after the diseased head is removed.

On these points the experience of Mr. Holmes coincides with our own:

"But if attained, is the spontaneous as good as the operative cure?

"I have no difficulty in saying that it is not. The cases which I have operated on successfully have uniformly shown that, after excision, the limb is not more — I think not so much — shortened than it is commonly after a spontaneous cure; while it enjoys a freedom of motion never attained after recovery by the natural process, and is at the same time quite as firm, and quite as capable of sustaining the weight of

the body. The spine, also, is straight in these cases; and thus the most formidable deformity which follows on the process of spontaneous cure is prevented."

As to the mode of operating, we prefer the V-shaped incision; and in order to secure the freest drainage, we always strap the flap back, and do not allow it to fall over the wound until it has granulated from the bottom.

The best result we obtained was where a greater part of the trochanter major was left. Although it protruded from the wound, this was controlled by extending the leg with a weight, and the attachment of muscles which is saved is certainly worth preserving. We have never gouged the pelvic bones, but allowed them to exfoliate. The sinuses left after recovery have always been over the upper end of the shaft of the femur, only. No doubt, as Mr. Holmes says, "excision of the hip often relieves the patient, merely by separating the diseased surfaces; and not always by removing the whole disease—for the inflammatory softening of the bones often extends farther than the surgeon cares to follow it. And it is thus that I explain many protracted recoveries, after excision, as being, in fact, a kind of 'spontaneous cure after operation,' if I may be pardoned the bull."

THE KNEE

Was excised *six* times, always for disease. Of these, two were subsequently amputated, one died, and three recovered, with more or less useful limbs.

Three were children, and three adults.

Two of the children and one of the adults recovered without amputation.

The general mortality, therefore, was seventeen per cent; but the ratio of real recovery was only fifty per cent.

So far as our experience goes, we cannot but regard the knee as affording the least prospect of success from excision of either of the large joints. Unlike the others, it aims at a cure by anchylosis, which, in so large bony surfaces, is accomplished with difficulty and accompanied by many perils. If successful, it is doubtful if the limb is more serviceable than a good artificial one; and we have in children the additional risk of an arrest of growth in the femur if the excision passes above the line of junction of the epiphysis. To avoid this, we cannot excise the whole articular surface of the femur; but in the tibia there is less danger, since the epiphysis is moderately thick, and includes the tubercle for the ligamentum patellæ.

The two children who recovered have been lost sight of, so that we cannot determine whether there has been an arrest of growth or not.

A cure of the diseased knee by anchylosis, without operation, can sometimes be attained, and is quite as serviceable as an excision.

Mr. Holmes considers excision of the knee more fatal than amputation. He thinks youth or childhood the preferable age for the operation; and he would select cases of fair constitution for the experiment.

By Dr. Hodges' tables, the mortality from excision of the knee (two hundred and eight cases) was *one* in *three and seven-fifteenths* cases; and the cases of death and failure of the operation together were about *one half*.

The great difficulty and drawback in the after treatment is to secure perfect immobility of the limb. This is of vital importance to attain anchylosis; and with a large suppurating wound it is very difficult to accomplish.

Of our cases, one was amputated, after one hundred and fifty days, for wasting suppuration and osteomyelitis, and one for obstinate hemorrhage from the cancellous tissue of the femur. One died from pyæmia. The average of convalescence was two hundred and forty-seven days. One child recovered, so far as is known, perfectly, in two hundred and seventy-five days. Another recovered in three hundred and eighty-nine days, but though walking pretty well at the end of three years still had sinus. The adult, who recovered in two hundred and seventy-three days, was on crutches, with the limb in a glue bandage, at the end of eighteen months; and without anchylosis, although the wound had closed.

In a seventh case of disease of the knee-joint in a youth, a free incision was made into the joint, and no excision used; he died of typhoidal prostration. Primary amputation at the knee-joint was twice performed; one died of pyæmia, the other was re-amputated.

The ankle joint was never formally excised. The whole lower articular end and shaft of the tibia were successfully removed in one instance, the details of which will be found in the paper on "Reproduction of the Tibia."

No.	Name.	Age.	Injury or Disease.	Duration.	Complications.	
					Primary.	Secondary.
1	Mary A. C. 1. 1.	34	Caries of knee joint.	2½ years.	Lithiasis.	Necrosis.
2	Ellen C. 1. 133.	7	Caries of knee.	3 years.	Sinus leading to necrosed condyle: anchylosis.	Bed sores.
3	William R. 1. 271.	25	Caries of knee from kick of horse.	3 years.	. . . .	Hemorrhage.
4	Samuel H. 5. 237.	22	Caries of wrist joint. Necrosis of carpus.	7 months.	. . . .	Bright's disease, with cerebral affection, marked by periodic headache of great severity, profuse sweating, and wild delirium, and at last, coma.
5	Michael D. 8. 45.	13	Caries of knee.	9 years.	Eczema.	Erysipelas.
6	Katie H. 11. 15.	15	Caries of elbow.	1 year.	. . . .	Abscess and profuse suppuration.
7	John C. 11. 64.	13	Comp. com. fract. into elbow.	1 hour.	. . . .	Erysipelas. Necrosis.
8	John C. 5. 83.	30	Comp. com. fract. into elbow.	2 hours.	. . . .	. . . .
9	Martha S. 11. 98.	6	Caries of head of femur.	1 year.	. . . .	. . . .
10	Frank P. T. 12. 231.	14	Hip disease.	4 months.	Sinus below trochanter, discharging pus and necrosed fragments. Extreme exhaustion.	. . . .
11	John G. M. 13. 200.	21	Hip disease.	39 months.	Sinuses and free suppuration in joint.	Bright's disease of kidneys.
12	William K. 13. 88.	5	Hip disease.	10 months.	. . . .	. . . .
13	Patrick C. 14. 27.	30	Caries of knee.	4 months.	. . . .	Erysipelas.
14	Dennis G. C. 14. 76.	15	Comp. com. fract. into elbow.	3 hours.	Fract. of opposite humerus; concussion.	. . . .

Operation.	Result.	Surgeon.	Remarks.
Excision of joint by circular incision below patella.	Amp. after 150 days. Recovery, 228 days.	Dr. Cheever.	
Excision by circular incision below patella; 2 in. of femur and ¼ inch of tibia removed.	Recovery perfect, 275 days.	Dr. Buckingham.	Union firm; no pain or external discharge.
Excision as above.	Amp. in 5 hours on account of uncontrollable intermediate hemorrhage. Recovery 70 days.	Dr. Buckingham.	
Excision through antero-posterior longitudinal incisions: all the carpus removed except the trapezium.	Death from cerebral disease, 98 days. (Bright's disease, from gun-shot wound in kidney.)	Dr. Buckingham.	The wrist had almost entirely recovered when the severe cerebral symptoms developed.
Excision by anterior incision below patella; both articular surfaces removed.	Recovery, 389 days.	Dr. Buckingham.	Walking with cane, knee insecure, three years subsequently.
Excision by posterior incision over olecranon; articular surfaces all removed.	Amp. of arm 8 weeks after excision. Slow recovery, 43 days after amputation.	Dr. Cheever.	Pt. a debilitated subject. Caries developed in opposite elbow after a year.
Primary excision, through enlarged comp. opening.	Recovery partial, after 63 days. Pt. removed by friends.	Dr. Buckingham.	
Primary excision.	Recovery, 134 days. Slight motion.	Dr. Thaxter.	
Excision by V-shaped incision over trochanter major. Head of bone removed below trochanter.	Recovery, 12 weeks, with 1½ inches shortening.	Dr. Cheever.	
Excision by V-shaped incision. Femur sawed above trochanter.	Recovery, 35 weeks after operation.	Dr. Buckingham.	
V-shaped incision. Bone sawed below trochanter.	Recovery partial, after 42 days. Patient left hospital, at own request, with open wound.	Dr. Cheever.	Pt. died subsequently of Bright's disease.
V-shaped incision. Head of bone removed below trochanter.	Recovery, 200 days.	Dr. Cheever.	
Articular surfaces entirely removed.	Recovery, 273 days.	Dr. Buckingham.	Knee still weak, after a year and a half. Pt. walks with crutches.
Resection of elbow.	Death in 24 days, from exhaustion.	Dr. Buckingham.	

(*Continued.*)

No.	Name.	Age.	Injury or Disease.	Duration.	Complications.	
					Primary.	Secondary.
15	Mary D. 15. 132.	6	Hip disease.	6 months.	Great depression.	Abscesses.
16	Thomas C. 19. 268.	6	Hip disease.	1 year.		
17	Emmet L. 19. 231.	20	Hip disease.	5 months.	Intemp. habits. Depressed condition.	Bed sores. Extreme exhaustion.
18	Giovanni R. 20. 15.	34	Comp. com. fract. into elbow.	3 hours.		Erysipelas. Phagedæna.
19	David D. T. 20. 156.	47	Comp. com. fract. of humerus into elbow.	1 hour.		Erysipelas and progressive phagedæna.
20	Honora D. 21. 54.	8	Hip disease.	2 years.	Emaciation and depress'n.	Tubercular meningitis; abscesses.
21	Andrew C. 21. 37.	8	Hip disease.	3 years.	Very much reduced. Sinus from joint discharging in middle third of thigh.	Abscesses.
22	Peter G. 21. 129.	38	Caries of elbow.	13 months.		
23	Maggie B. 21. 176.	7	Hip disease.	4 years.	Sinuses.	
24	George H. R. 21. 189.	6	Caries of knee.	2 years.	Anchylosis.	Pyæmia.
25	David McD. 21. 203.	4	Hip disease.	2 years.	Sinuses.	
26	Mary L. B. 22. 60.	11	Caries of elbow and necrosis of humerus, from old fracture into joint.	4 months.		
27	Lizzie F. 22. 132.	3	Caries of elbow with necrosis of the humerus.	6 months.	Anchylosis. Sinus into joint.	
28	John R. 1. 219.	32	Comp. com. fract. of humerus into elbow.			Delirium tremens. Great exhaustion.

RECAPITULATION.

	Wrist	Elbow	Knee	Hip	Total
Recovered	1	8	5	7	20
Died	do. 1	do. 2	do. 1	do. 4	do. 8
Total	1	10	6	11	28
Ratio of mortality	do. 100 p. ct.	do. 20 per et.	do. 17 per ct.	do. 36 per ct.	do. 43 per ct.
Ave. convalescence		do. 85 days.	do. 247 days.	do. 328	do. 220 days.

Recovery without amputation	Elbow 5	Knee 3	Hip 7	Total 16
Amputated	do. 4 (1 died)	do. 2 (2 rec.)		do. 6

(*Continued.*)

Operation.	Result.	Surgeon.	Remarks.
V-shaped incision. Bone sawed below trochanter major.	Recovery, 18 months.	Dr. Cheever.	A very unfavorable subject.
Excision as above.		Dr. Cheever.	Of very feeble constitution. Still in hospital, doing well.
Excision as above; section of bone above trochanter.	Death from exhaustion, 10 weeks.	Dr. Thaxter.	
Excision of elbow joint (primary).	Amp. after 25 days, at shoulder. Recovery, 56 days after amputation.	Dr. Ropes.	
Excision by posterior incision.	Amp. of arm after 15 days. Recovery in 19 days.	Dr. Homans.	
Excision of head of bone by V-shaped incision.	Death from tubercular meningitis, 10 weeks.	Dr. Cheever.	
Excision as above.		Dr. Cheever.	Still in hospital, doing well.
Excision of whole articular surfaces, by posterio incision over olecranon.	Recovery, 78 days, with an excellent result.	Dr. Cheever.	
Excision as above. Bone sawed above trochanter.		Dr. Cheever.	In hospital, doing well.
Excision by transverse incision below patella.	Death from pyæmia, 25 days.	Dr. Cheever.	
Excision as above. Head of bone found loose in acetabulum.	Death from exhaustion, 57 days.	Dr. Cheever.	
Excision of whole articular surfaces, by H-incisions over olecranon.	Recovery, 122 days, with partial mobility of joint.	Dr. Thorndike.	
Excision of whole joint by H-shaped incisions.	Recovery, 68 days.	Dr. Thorndike.	
Excision of joint (primary).	Amp. of arm at shoulder, after 9 days. Death from shock.	Dr. Thaxter.	

NOTE. The numerals under the name of each patient refer to the Volume and Page of the Hospital Records, where a complete history may be found.

ARTICLE III.

CASES OF PNEUMONIA.

BY J. N. BORLAND.

The tables at the close of these remarks present the histories of one hundred and ninety cases of pneumonia, which have been treated in this hospital during the five years, from the opening of the institution, June 1, 1864, to June 1, 1869.

I have included in the series only those cases in which the diagnosis was undoubted, and which were admitted and treated expressly for the disease under consideration. It is necessary for this latter statement to be made, because a portion of these cases which I have selected, it will be seen, were complicated with other diseases.

An examination of the tables shows us the following points of interest: —

Sex. — Of these one hundred and ninety cases, one hundred and eighteen occurred in males, seventy-two in females.

Nationality. — But sixty-three were born in North America, and twelve of these were natives either of Canada or of the British Provinces, one

hundred and sixteen were born in one or the other of the British Isles, Ireland claiming far the greater number of them. Five were Germans, two were Swedes, two were Norwegians, one was a Frenchman, and there was one Italian.

Occupation.—One hundred and seven of the cases which have been recorded, occurred in persons of either sex, who led lives protected from weather; either being servants, or whose trades were carried on within doors; the other eighty-three being those whose lives have been those of exposure and hardship, such as seamen, open-air laborers, etc. A few of these have had marked exposure to dampness, and a few were debilitated from alcoholic abuses; but the histories of these, as obtained, are so meagre, that their value in this point of view is comparatively slight.

Age.—The average age of the males was thirty-one years and five months; that of the females was thirty years and seven months; that of both sexes was thirty-one years and four months. From the age of one to ten years, there was one case, a female; from ten to twenty years, there were thirty-seven cases, twenty of them being males, and seventeen females; from twenty to thirty years, there were eighty-four cases, fifty of them being males, and thirty-four females; from thirty to forty years, there were twenty-seven cases, twenty being males and seven females; from forty to fifty years, there were nineteen cases, sixteen being males and three

females; from fifty to sixty years there were also nineteen cases, eleven being males and eight of them females; and from sixty to seventy years, there were three cases, one being male, the other two females.

The youngest patient in the series was a little girl of three and a half years old; the oldest was a woman of seventy years.

Admissions. — The whole number of medical patients admitted to the Hospital during the five years ending June 1, 1869, was 3,709, and these one hundred and ninety cases are nineteen and a half per cent of the whole. This may be taken as an approximation to the amount of pneumonia which ordinarily exists in this city. They were admitted according to seasons as follows: In the winter months, sixty-two, viz. in December, twenty cases; in January, eighteen; in February, twenty-four; in the spring months, sixty-four, — there being, in March, twenty-three; April, twenty-six; May, fifteen. In the summer months there were nineteen: in June, five; in July, five; in August, nine. In the autumn months there were forty-five: September showing ten cases, October, fifteen, and November, twenty.

The prevalence of Pneumonia, as is thus seen, corresponds closely with the seasons, the smallest number being received during June and July, then rising steadily through August, September, and October, until the chills of November raise the point of development to that resulting from winter's cold; and the maximum being reached during the existence of the combination of cold and dampness, as brought about in our spring weather.

Complications. — Out of the one hundred and ninety cases, one hundred and seven were pure cases of pneumonia, absolutely unconnected with any other disease, eighty-three being complicated with other forms, as follows: —

With phthisis, seventeen cases; phthisis and pleurisy, one; phthisis and bronchitis, one; phthisis and fatty degeneration of the kidney, one; phthisis, terminating fatally with embolism, one; pleurisy, eleven; pleurisy, with surgical injury, one; pleurisy, with intermittent fever, one; bronchitis, four; chronic bronchitis, with rheumatism, one; or pneumonia, complicated with other pulmonary diseases, thirty-nine cases. With rheumatism, four; rheumatism and measles, one; rheumatism and cardiac diseases, two; rheumatism and dysuria, one; rheumatism and phthisis, one; sub-acute rheumatism and fatty degeneration of kidney, one; chronic rheumatism and debility, one; typhoid fever and its sequelæ, five; cerebro-spinal meningitis, one; intermittent fever, two; cardiac diseases, two; laryngitis, one; pharyngitis, one; tonsillitis, one; scarlatina and herpes-zoster, one; measles, two; roseola, one; surgical injuries, two; surgical injury with erysipelas, one; surgical injury with albuminuria, one; renal disease, one; pelvic cellulitis, one; dyspepsia, one; dyspepsia and secondary syphilis, one; vomiting, one; diarrhœa, three; acute synovitis, one; spinal congestion, one; phlegmasia alba dolens, one; chlorosis, one.

Duration. — In these cases I have computed, as accurately as I have been able, the duration from its

commencement; that, is from the rigor, until the disappearance of the disease, covering the term of convalescence, as well as the period of its activity. The uncomplicated cases averaged nearly eleven days sick before entrance, and were in the hospital on an average of twenty-three days and a half. The complicated cases averaged a little over ten days sick before entrance, and thirty-two days residence in the wards.

Locality and Amount of Disease. — The number of uncomplicated cases on our list amounts, as before said, to one hundred and seven. Of these, forty-four were double, fifty-nine single, and in four this point is not stated. Of these cases of double pneumonia, the two lungs are said to have been equally affected in seventeen; in nineteen the right lung was most involved, in eight the left lung. Of the single pneumonias the right lung suffered the most in forty instances; the left lung in nineteen; while, as before noted, in four cases this point is not settled.

The complicated cases amounted to eighty-three, and of these, thirty-seven were double, forty-six were single. Of these double complicated cases, the two lungs were equally affected seventeen times, nine times the right lung suffered the most, eleven times the left.

In this class of cases, where the pneumonia was single, the right lung was most diseased twenty-two times, the left lung twenty-four times.

It will thus be seen that in the cases of uncomplicated pneumonia the right lung has shown a much

stronger tendency to become diseased, in the proportion of fifty-nine to twenty-seven, or fully fifty per cent; while in the complicated forms, the right lung was most extensively diseased in thirty-nine cases, and the left in thirty-five, showing the balance to be slightly in favor of the left. Was this merely accident, or is there anything in the character of the complications to turn the scale? Perhaps it may have been in the fact that thirty-nine of the complications, or nearly one-half, were those of pulmonary diseases. In a clinical report on pneumonia, based on analyses of one hundred and thirty-three cases, published by Dr. Austin Flint, in the American Journal of the Medical Sciences, January, 1861, it is stated that the right lung suffered the most in sixty-four cases, the left in thirty-seven, being nearly the same proportion observed in our series.

Temperature. — In numerous cases there were thermometric observations taken. The results were, of course, more valuable and interesting in those where we were enabled to watch the disease from the very commencement, and they confirm the deductions drawn by Dr. Grimshaw, of Dublin, and which, closing an article published by that gentleman in the *Dublin Quarterly Journal* for May, 1869, page 335, are as follows: —

1st. Pneumonia has (when uncomplicated) a tolerably definite range of temperature.

2d. The highest temperature attained is usually between 103° and 104° Fahr.

3d. The maximum temperature is usually attained on the third, fourth, and fifth days, after which the

temperature falls, and reaches the normal on the sixth or seventh day.

4th. The height of the thermometer does not necessarily indicate the intensity of the disease.

5th. The fall of temperature does not indicate the cessation of mischief, but only that the disease is about to enter on the third stage.

6th. If a high temperature is maintained for a long time (more than three or four days), or a fresh rise takes place, it indicates either a fresh attack in a previous healthy part, or the advent of a complication.

7th. The temperature and the pulse usually, though not always, rise and fall together.

8th. The temperature usually decreases before the frequency of respirations diminish.

Treatment. — The greater proportion of these cases have been treated according to the plan set forth by Dr. Bennett, by restoratives directed to further the natural progress of the disease, and support the vital strength, not endeavoring to cut the disease short, or to weaken the pulse or the vital powers. The general outline of this mode of nutrition and stimulation in the hospital has been as follows: Milk always by the bedside for the patient to drink at will. Beef tea and wine whey, given alternately, regulating the frequency by the severity of the case. In the most severe cases they are given, every two hours, three or four ounces, and in some cases, for a while, two ounces every hour alternately; so that the patient gets from six to twelve ounces of sherry wine daily, that is, dur-

ing the waking hours of the twenty-four. If there is great debility, milk punch or brandy punch is substituted for the wine whey. As soon as possible, the alcoholic stimulus is withdrawn, and is replaced by soups, etc. As soon as convalescence takes place, and the patient begins to ask for food, he is placed on a liberal diet of mixed animal and vegetable food. External applications have been made in many cases, by enveloping the entire side affected, or both sides if necessary, in a "jacket poultice" of flax-seed meal, which is carefully attended to, and always kept warm and fresh. The active symptoms over, if convalescence seems likely to be protracted from any cause, cod-liver oil, iron, quinine, etc., have been given, as judged necessary. In a number of cases, wine of antimony was given in minute doses of six to eight drops every hour. This mode of using the medicine, it is believed, does not conflict with the general plan laid down, to use the words of Dr. John Spender, of Bath, in an article published in the *British Medical Journal*, March 23, 1867, page 313: "The action of this medicine has been well expounded by Dr. Billing and Dr. Headland. Dr. Headland lays emphasis on its neurotic influence; and Dr. Billing has entered largely into the subject, and with a certain boldness of language, speaks of the tonic properties of antimony and calomel. That is to say, the capillary blood-vessels being distended in normal inflammation by the stasis of their contained blood, are reduced in size by the action of antimony on the vaso-motor nerves, the blood is propelled onwards, exudation is checked, and heat, pain, redness, and swelling go

away. In brief, the inflammation is summarily put an end to, and that not by any weakening of the nerves of the capillaries, but by endowing them with more life. Any substance which does this must be described as an instrument of tone and power." Our cases treated in this way have been very satisfactory; no nausea or depressing effects of any sort have been observed, but the medicine has acted like a true tonic.

This general plan was followed, as far as possible, in the complicated cases; it being necessarily varied in some cases by the nature of the complication.

In six cases only were calomel and antimony combined and given, being administered three times daily, all of which recovered. In no case was bleeding practised.

Results. — These cases resulted as follows: of the one hundred and seven uncomplicated cases, ninety-five were discharged well, two relieved, and ten died, or one to every ten and one-seventh cases.

In the article on the disease under question, published by Dr. J. H. Bennett, of Edinburgh, in his work on Practical Medicine, he gives statistics on the results in pneumonia under various forms of treatment; showing the mortality under the practice of large bleedings to have varied with different practitioners from one death in every two and one-half cases, to one in every six.

Under treatment by large doses of tartar-emetic, the results are one death in every four and one-half to five and a half cases.

Under a strictly antiphlogistic diet, the mortality varied from one in thirteen and a half to one in ten and a ninth. Under his own plan of "treatment by restoratives," directed to further the natural progress of the disease, and supporting the vital strength, out of one hundred and five uncomplicated cases treated in fifteen years by himself, personally, in the clinical wards of the Royal Infirmary at Edinburgh, not one died; his whole mortality being one in thirty-two and a half.

With such results attained by Dr. Bennett, one naturally turns to our fatal cases, to see if there is anything which can be discovered in them to explain the death. Can it be that pneumonia is a disease of severer type in this country than it is in Scotland?

Fatal Uncomplicated Cases. — Case 1 was that of a girl of feeble health, with a tendency to pulmonary hemorrhage. She had been sick three weeks, and was much debilitated at entrance, and died on the forty-fifth day of her illness. Treated by expectorants, nutrients, alcoholic stimulants, fomentations.

Case 50, a bootmaker, of excellent constitution, health, and habits. Entered on eighteenth day of sickness, and died on the twenty-third. Disease was double; the right side being most involved. Treated by stimulants, beef-tea, etc.

Case 68 was that of an Italian barber, who had been in America two years and a half; of strong, vigorous constitution, and general health good. Was

sick one week before entrance. Disease was double in character, affecting lower two-thirds of each lung. Pulse rated about one hundred and twenty. Respirations from forty to sixty per minute. Treatment consisted mainly of jacket poultices, tincture of the chloride of iron, quinine, cough syrups, with supporting food of beef essence, brandy punch, champagne, etc. He died on the eighteenth day after admission, and the twenty-fifth day of the disease.

Case 73 was that of a Frenchman, whose occupation was that of a mirror maker. He was a patient in the hospital from May till the early part of July, for a palmar abscess, and was discharged nearly well. He was re-admitted on the tenth of October, same year, having been sick for three weeks with double pneumonia, and died five days afterwards, on the twenty-sixth day of the disease. Treated by stimulants, and pills of hyoscyamus and camphor.

Case 104 was that of an Irishman, twenty-nine years old. He was delirious at the time of admission, and until his death, which took place five days afterwards. The history of this case is imperfect in points of duration, amount and locality of the disease. Treatment: Milk, beef tea, jacket poultice, brandy, quinine, carbonate of ammonia, Dover's powders, and a fever mixture of sweet spirits of nitre and liquid acetate of ammonia.

Case 156 was that of a laboring man who had been treated in the hospital for pneumonia and

intermittent fever; was discharged well. On leaving he slept in a cold room, with insufficient bedclothes; in two days disease returned; after being sick fifteen days he re-entered, and in five days more died. Treatment: Supporting and nourishing. Disease was double, and the left lung most affected.

Case 157, a 'longshore man, sick one week; died two days after admission. Disease was very extensive, double; right side most affected; was actively delirious when admitted and until death. Treatment by jacket poultices, milk, beef tea, brandy and carbonate of ammonia every hour during the last twenty-four hours.

Case 160, a porter, whose constitution and previous health had been excellent, although occasionally getting drunk. Disease commenced five days before entrance, and was single, involving all of right lung. Pulse rated as high as one hundred and fifty-six; respiration, sixty-six; some delirium; he died three days after admission, on the eighth day of sickness. Treatment was of the usual character.

Case 166, a young Irish servant girl, who never had been ill previous to present trouble. She was admitted on the fifth day of her illness, and died on the eighteenth. The disease was single, being confined to the right side. Pulse varied from one hundred and fourteen to one hundred and thirty; respiration, forty to sixty. Treated by jacket poultices, quinine, carbonate of ammonia, brandy, etc.

Case 178 was that of a young, healthy farmer lad. Was admitted on the fourth day after the chill, and died on the fourteenth day of his sickness. The disease was double, very extensive, right lung suffering the most. Pulse ranged from one hundred and twenty to one hundred and fifty-six; respiration, thirty-six to fifty-six. Treated as usual.

Case 180 was that of a laboring man, forty-nine years old, who had always been healthy previously. Was admitted on the eighth day of his sickness, and died on the fourteenth. Disease double and extensive. Treated as usual.

Fatal complicated cases. — The complicated cases being eighty-three in number, show us a result of sixteen deaths, seven being males and nine females, or in nearly the proportion of one to five.

Case 10, an Irish seamstress, who was sick for three weeks before entrance, with the disease in a double form. Was treated by expectorants and blisters, and was progressing satisfactorily, until the sudden appearance of cerebro-spinal meningitis, which proved fatal in twenty-four hours.

Case 18, occurred in the person of a man who was fifty years old, and broken down by hard life and work and drunkenness; the complications were subacute; rheumatism and fatty degeneration of the kidneys. He was treated by opiates and stimulants, and died on twenty-sixth day of the disease.

Case 26 was a woman, forty years old, who died three days after entrance, on tenth day of the disease. The complications were phthisis and fatty degeneration of the kidneys. The treatment was principally by nourishing food.

Case 33 was a young girl of seventeen years; was sick thirty-five days, and was complicated with phthisis and pleurisy. Treatment was stimulating and nourishing, with some simple expectorants.

Case 41 was a man, forty-nine years old, who had been healthy, but a fall from a staging, three years before pneumonia, broke three of his ribs, and after that time he had, on taking cold, abnormal sensations in right side, but no cough or expectoration. There were some suspicions that phthisis was becoming developed with the pneumonia, but the physical signs were not marked, when he rather suddenly died, which fact, with that of its being preceded by faintness, and then by numbness and coldness of one leg, suggested embolism as the cause of the fatal result. He died on thirty-seventh day of the disease, having been in the hospital thirteen days, during which time his treatment consisted of brandy, carbonate of ammonia, quinine, and twelve ounces of sherry daily.

Case 52 was a servant woman, whose case was complicated with typhoid fever and diarrhœa, dying on ninth day of disease.

Case 67 was an Irish laborer, forty-nine years old, a double case, following a fall ten days before his

admission, and combined also with pleurisy; he was delirious throughout, dying on the thirteenth day of the case. Treatment as usual.

Case 98 was that of a laundress, fifty-five years old; was sick three weeks before admission, and died nineteen days afterwards. Disease was complicated with acute Bright's disease, and presented general character of debility.

Case 105 was that of a young Irish girl, twenty-two years old; was admitted the day of commencing illness; the disease was double, involving both lower halves of backs, and was complicated with acute rheumatism and with endo and pericarditis. She died on the twenty-seventh day of disease.

Case 112 was that of a young teamster, who was admitted the seventh day after the chill. The disease was complicated with an obstinate diarrhœa, and came on two days after straining himself in lifting a heavy weight. Effects of the strain were felt at the epigastrium. He died the third day after entrance, on the tenth day of disease.

Case 141, a woman, thirty-eight years old; mother of eight children. Extremely anæmic. Disease commenced three weeks before entrance, from a chill on going to church, shortly after her last confinement. She died eight days after entrance.

Case 169 was a young servant woman, who had been overworked, but thought herself to be healthy previous to present sickness, which she considered to have commenced six days before entrance.

She died two days after admission. The disease was marked in posterior parts of both lungs, most in the left. The aortic and mitral valves much thickened. The left kidney contained a mass of degenerated tissue, about the size of a filbert, the centre of which was almost diffluent, and containing fat granules and fatty epithetial cells.

Case 173 was a tailor, forty-five years old; had been generally well, but had "a cold" for six weeks previous to sickness. Was taken sick three days before entrance, and died four days afterwards. Disease was complicated with pleurisy and vomiting.

Case 175, a laborer, who had phthisis, entered the hospital ten days after the present trouble commenced, and died eleven days afterwards.

Case 177 was in the hospital but five days; was an old woman; and the disease surpervened on phthisis.

Case 187, a laborer; disease complicated with measles; had been sick one week. Eruption appeared night before entrance. He died on the twenty-sixth day of his sickness.

Finally, these cases have been treated, either wholly or in the commencement, in the following terms of service: By Dr. J. Homans, 5 cases; Dr. W. W. Morland, 5 cases; Dr. J. P. Reynolds, 5 cases; Dr. J. G. Blake, 34 cases; Dr. J. N. Borland, 52 cases; Dr. J. B. Upham, 26 cases; Dr. H. I. Bowditch, 11 cases; Dr. A. Sinclair, 18 cases; Dr. F. E. Oliver, 34 cases.

No. of Case.	Name and Occupation.	Age.	Date of Entrance.	No. of days sick before Entrance.	Whole duration of Disease.	Result.	Locality of Disease.	Single or Double.	Vol. & p. of record.
1	L. E. F., American servant girl.	23	1864. June 30.	21	45 days.	Dead.	Right side largely involved.	Single.	Vol. 1, p. 15.
2	J. McC., Irish 'long-shoreman.	25	Aug. 2.	21	30 days.	Well.	Lower part of right side.	Single.	Vol. 2, p. 27.
3	C. A. J., American seaman.	51	Aug. 16.	10	21 days.	Well.	Left lower half of lung.	Single.	Vol. 1, p. 35.
4	M. S., Irish, mar. woman.	28	Aug. 24.	42	95 days.	Well.	Right lower third.	Single.	Vol. 1, p. 49.
5	A. E. B., American servant girl.	24	Sept. 15.	5	17 days.	Well.	Both lower backs.	Double.	Vol. 1, p. 67.
6	C. H., Irish servant girl.	20	Oct. 14.	8	46 days.	Well.	Left side; very extensive.	Single.	Vol. 2. p. 100.
7	J. G., Irish, laborer.	27	Oct. 18.	14	44 days.	Well.	Both lower backs throughout.	Double.	Vol 1, p. 73.
8	S. N., American servant girl.	30	Oct. 21.	9	43 days.	Well.	Both backs, left most involved.	Double.	Vol. 1, p. 93.
9	A. McG., Irish servant girl.	24	Nov. 1.	21	52 days.	Well.	Both backs at bases.	Double.	Vol. 2, p. 112.
10	M. F., Irish, seamstress.	22	Nov. 5.	21	25 days.	Dead.	Both backs, left most involved.	Double.	Vol. 1, p. 109.
11	F. C., American hack driver.	20	Nov. 5.	21	45 days.	Well.	Both backs extensive.	Double.	Vol. 2, p. 85.
12	J. G., Irish, wet-nurse.	26	Nov. 17	6	41 days.	Well.	Both backs, right most involved.	Double.	Vol. 1, p. 119.
13	J. H., American seaman.	28	Nov. 25.	2	19 days.	Well.	Right side, whole lower half.	Single.	Vol. 1, p. 93.
14	J. W., Irish, laborer.	59	Nov. 25.	21	36 days.	Well.	Both lungs, below spine of scapula on right, and in the lower half of left.	Double.	Vol. 2, p. 93.
15	M. B., American cookmaid.	50	Dec. 8.	28	109 days.	Rel'd.	Whole of right lung.	Single.	Vol. 2, p. 136.

Complication.	Treatment.	Remarks.	By whom treated.
None, unless general debility.	Expectorants, alcoholic stimulants, nutrients, fomentations.	3 mos. before illness, often hæmoptysis; no phthisis. Dis. followed exposure to wet; feeble at entrance. P. ranged 100-160 throughout. Had had rusty sputa.	W. W. Morland.
None.	Expectorants.		J. Homans.
Chronic phthisis.	Expectorants, opiates, croton oil.	Patient had physical and rational signs of pneumonia. Was discharged well of pneumonia, and much relieved as to phthisis.	F. E. Oliver.
None.	Quinine, stimulants.	Debility from hard work accounts for lingering character.	F. E. Oliver.
None.	Calomel, antimony and light diet at first; then croton oil and expectorants.	Never very robust. Character of disease well marked, with rusty sputa.	F. E. Oliver.
None.	Expectorants and supporting treatment.	Rusty sputa. Case single at entrance; became double at end of one week. Delirious at times. Pulse 106 to 112, sharp: at entrance, 80, weak.	J. Homans.
Rheumatism.	Opiates and calomel, with tartrate of antimony.	Good constitution. Sputa never noticed as rusty.	F. E. Oliver.
None.	Chiefly expectorants, with good diet.	Rather a feeble woman, with catamenial irregularities.	F. E. Oliver.
None.	Stimulating, with expectorant mixtures.		J. Homans.
Cerebro-spinal meningitis.	Expectorants and blisters.	Condition improved, until the appearance of the cerebro-spinal meningitis, which proved fatal in twenty-eight hours.	F. E. Oliver.
Phthisis.	Expectorants, blisters, cod-liver oil.	Had suffered from asthma and from exposure to wet and cold; was well of pneumonia when discharged from hospital, but marked phthisis existed.	J. Homans.
None.	Cod-liver oil, quinine, milk punch, &c.		F. E. Oliver and J. N. Borland.
Pleurisy.	Calomel, opium and tartrate of antimony at commencement.	P. 112. Resp. 36.	F. E. Oliver and J. N. Borland.
Disease followed by erysipelas.	Ether and supporting treatment.	Patient was retained in hospital some time after the pneumonia was well, because of facial erysipelas and debility.	J. Homans and J. B. Upham.
None.	Counter-irritants and stimulants.	An old woman overworked by prolonged labor in heat, averaging 20 hours per day. Disease was sub-acute in character.	J. B. Upham.

(*Continued.*)

No. of Case.	Name and Occupation.	Age.	Date of Entrance.	No. of days sick before Entrance.	Whole duration of Disease.	Result.	Locality of Disease.	Single or Double.	Vol. and page of Record.
16	M. G., Irish laborer.	25	1865. Jan. 2.	6	65 days.	Well.	Both lungs in backs.	Double.	Vol. 2, p. 117.
17	C. A., Irish cookmaid.	28	Jan. 5.	14	61 days.	Well.	Both sides, lower halves of backs.	Double.	Vol. 1, p. 165.
18	J. O., American coachman.	50	Feb. 10.	21	26 days.	Dead.	Left lower back.	Single.	Vol. 1, p. 147.
19	D. M., English hatter.	32	Mar. 18.	8	21 days.	Well.	Right side all below angle of scapula.	Single.	Vol. 1, p. 171.
20	L. W., American servant wm.	18	Apr. 6.	10	49 days.	Well.	Middle of left back.	Single.	Vol. 4, p. 3.
21	M. L., Irish servant wm.	30	Aug. 25.	3	35 days.	Well.	All of right back.	Single.	Vol. 3, p. 178.
22	B. M., Irish servant girl.	20	Sept. 8.	21	32 days.	Well.	Not stated.	Not stated.	Vol. 3, p. 202.
23	J. C., Austrian dyer.	36	Sept 8.	7	39 days.	Well.	All of left lung.	Single.	Vol. 4, p. 247.
24	S. K., widow, American.	27	Sept. 20.	30	40 days.	Well.	Left lower lung.	Single.	Vol. 3, p. 220.
25	L. R., Irish laborer.	22	Sept. 21.	7	26 days.	Well.	Bases of both lungs.	Double.	Vol. 3, p. 222.
26	B. R., Irish servant woman.	40	Oct. 6.	7	10 days.	Dead.	Upper half left lung.	Single.	Vol. 6, p. 36.
27	M. B., Irish laundress.	48	Oct. 14.	12	58 days.	Well.	Both backs, the right most extensive.	Double.	Vol. 3, p. 265.
28	E. B., Irish servant woman.	27	Nov. 13.	13	46 days.	Well.	Lower 2-3 left, lower 1-3 right.	Double.	Vol. 5, p. 40.

(*Continued.*)

Complication.	Treatment.	Remarks.	By whom treated.
None.	Nourishing diet and stimulants.		J. B. Upham.
None.	Expectorants, quinine, wine whey, nutrients.	Severe case; physical signs well marked. No rusty sputa recorded.	J. N. Borland.
Sub-acute rheumatism and fatty degeneration of kidney.	Opium, wine whey.	An habitual drunkard — had lived and worked hard. P. 106, hard and vibrating.	J. N. Borland.
None.	Stimulants.	P. 76. Sputa rusty, viscid.	J. N. Borland.
None.	Fever mixture and Dover's powders.	Had an attack of pneumonia four years previously.	J. G. Blake.
None.	Pill of submuriate tart-antimony and opium every four hours for first 2 days. Then a fever mixture of Liq. ac. ammonia, etc., with beef tea and stimulants in the last half of the case.	P. ranged from 76 to 84. Respiration for first half of sickness from 40 to 48.	F. E. Oliver.
None.	Acetate of ammonia, nitre, and camphor water mixture three times daily, with opiated squill cough syrup, as needed.	Probably a single pneumonia.	F. E. Oliver.
None.	Beef tea, whiskey, opiates as needed.	P. ranged about 80. No. of respirations not given, but frequent allusions to dyspnœa.	J. P. Reynolds.
Probably was phthisical. History and record confused and indistinct — rusty sputa one week before entrance.	Expectorants and jacket poultices.	P. 86. Respirations about 30. Much dyspnœa.	F. E. Oliver.
In stage of incipient phthisis.	Opium, gr. 1-4 Calomel, gr. 1 1-2 Tart. antimony, gr. 1-8 Every four hours for two days, then fever mixture.	Pulse 84, irregular, intermittent. Resp. 28, easy at entrance.	F. E. Oliver.
Phthisis & fatty degeneration of kidneys.	Iced milk; afterwards full diet. Tincture of hyoscyamus, thirty drops at night.	Had been treated in Mass. Gen. Hospital through May and June for diabetes.	J. P. Reynolds.
None.	Milk punch, beef tea, Dover's powder; in last half, when feverish, a fever mixture; after that solution of quinine.	Pulse 96 to 100. Resp. 24, gradually falling.	F. E. Oliver.
None.	Calomel, 4 gr. Antimony, ½ gr. Opium, ¾ gr. Every four hours at first, and till gums were sore.	Sthenic case. P. 96, full. Respirations 32, at entrance.	F. E. Oliver.

(Continued.)

No. of Case.	Name and Occupation.	Age.	Date of Entrance.	No. of days sick before Entrance.	Whole Duration of Disease.	Result.	Locality of Disease.	Single or Double.	Vol. and page of Record.
29	J. H., American mason.	35	1865. Nov. 27.	2	24 days.	Well.	Lower 2-3 left, 1-2 right.	Double.	Vol. 6, p. 180.
30	J. F., Irish carpenter.	20	Nov. 27.	9	91 days.	Well.	Lower halves both lungs.	Double.	Vol. 5, p. 71.
31	P. R., German baker.	21	Nov. 28.	2	23 days.	Well.	Lower 2-3 of right back.	Single.	Vol. 6, p. 188.
32	L. W., German waiter.	27	Dec. 9.	21	42 days.	Well.	Both lower backs.	Double.	Vol. 6, p. 236.
33	M. D., American servant girl.	17	Dec. 20.	21	35 days.	Dead.	Both backs, left throughout, right lower half.	Double.	Vol. 8, p. 4.
34	M. O'B., Irish servant girl.	20	1866. Feb. 3.	17	63 days.	Well.	Both backs, lower halves.	Double.	Vol. 8, p. 150.
35	E. C., American servant girl.	18	Feb. 10.	21	66 days.	Well.	Both backs, lower 2-3.	Double.	Vol. 8, p. 184.
36	M. S., Irish laborer.	25	Mch. 1.	10	41 days.	Well.	Both backs; most severe on right side.	Double.	Vol. 8, p. 232.
37	E. M., Irish widow.	35	Mch. 1.	9	17 days.	Well.	Lower third of left back.	Single.	Vol. 7, p. 72.
38	M. M., child of Case 37.	3½	Mch. 1.	10	18 days.	Well.	Lower half of right back.	Single.	Vol. 7, p. 74.
39	Wm. Mc—, Irish laborer.	53	Mch. 13.	6	24 days.	Well.	Both lower backs; right side worst.	Double.	Vol. 7, p. 66.
40	M. C., Irish servant wm.	39	Mch. 29.	5	19 days.	Well.	Half of right side.	Single.	Vol. 7, p. 117.
41	M. H., American carpenter.	49	Apr. 3.	24	37	Dead.	Lower half of right back.	Single.	Vol. 10, p. 29.

(*Continued.*)

Complication.	Treatment.	Remarks.	By whom treated.
Intermittent fever.	Beef tea, milk and quinine.		J. P. Reynolds and J. B. Upham.
Typhoid fever.	Beef tea, stimulants, quinine.	P. 100, strong at first, then weak and reduplicating. Resp. 36 to 40. Temperature 102.5 to 104.	J. N. Borland.
None.	Beef tea and stimulants, and opiates p. r. n.	P. 120, reduplicating at first.	J. B. Upham.
Phthisical tendencies.	Cod-liver oil, nutrients, opiates as needed.	Sub-acute form.	J. B. Upham.
Pleurisy and probably phthisis.	Stimulating and nourishing, with some simple expectorants.	No autopsy allowed. Pulse at entrance 108, full, soft. Respiration 36. No rusty sputa.	J. B. Upham.
None.	Nourishing and stimulating —brandy, beef tea and morphine as needed.	Eight days delirious. Had been 3 weeks in America. P. 130, weak, rapid, irregular and compressible at entrance.	J. B. Upham.
None.	Beef tea, milk, brandy, Dover's powders as needed.	Pulse at entrance, regular, compressible and 112. Resp. 44.	J. B. Upham.
None.	Beef tea, milk, whiskey, opiates, counter-irritants.	Left side became involved 5 days after entrance. P. 100, moderately full at entrance, afterwards 108 to 112.	J. B. Upham.
None.	Syrup of tolu and fluid extract cubebs.	P. 68; rusty sputa.	J. N. Borland.
None.	Cod-liver oil.	Pulse 140; resp. 60.	J. N. Borland.
Sickness preceded by fall from a staging; pneumonia fol. by albuminuria; discharged much relieved of this, Ap. 12.	Morphine, cod-liver oil, whiskey, nourishing food, &c.	Pulse 88; natural at entrance.	J. N. Borland.
None.	Swt. spts. nitre, Dover's powder, baths and sherry wine.		W. W. Morland.
Possibly some phthisical trouble developed during disease, but indications not marked. Suddenness of death, an attack of fainting on one day, and later coldness and numbness of leg suggested embolism.	Brandy, carbonate of ammonia, sherry to amount of oz. xii. per day, and quinine.	Inherited no disease; had been of good constitution; 3 years before sickness, had fallen from staging and fractured 3 ribs. Ever since, on taking cold, abnormal sensations in right side, but no cough or expectoration.	J. G. Blake.

(*Continued.*)

No. of Case.	Name and Occupation.	Age.	Date of Entrance.	No. of Days sick before Entrance.	Whole duration of Disease.	Result.	Locality of Disease.	Single or Double.	Vol. and Page of Record.
42	J. K., American carpenter.	27	1866. Apr. 14.	10	15 days.	Well.	Middle of lower back.	Single.	Vol. 10, p. 67.
43	J. C., Irish tailor.	45	May 22.	6	39 days.	Well.	Nearly all of right lung.	Single.	Vol. 10, p. 174.
44	R. K., American seaman.	42	May 23.	0	2 days.	Dead.	Whole right back, lower 2-3 left.	Double.	Vol. 9, p. 5.
45	E. P., American housekeepe .	56	July 3.	21	49 days.	Well.	Not stated.	Not stated.	Vol. 12, p. 4.
46	H. F. M., American errand boy.	42	July 18.	4	12 days.	Well.	Bases of both lungs, most marked at right.	Double.	Vol. 12, p. 42.
47	M. B., Irish carpenter.	32	July 24.	6	39 days.	Well.	Lower 3-4 of right lung.	Single.	Vol. 12, p. 52.
48	J. S., Irish blacksmith.	50	Aug. 15.	8	13 days.	Well.	Lower half of right back.	Single.	Vol. 9, p. 184.
49	P. H., Irish H. R. R cond.	19	Aug. 20.	10	21 days.	Well.	Left upper back.	Single.	Vol. 9, p. 191.
50	M. W., Irish bootmaker.	27	Aug. 24.	18	23 days.	Dead.	Lower half of left and all of right lung.	Double.	Vol. 12, p. 150.
51	J. C., Hib.-Amer. laborer.	24	Sept. 21.	4	33 days.	Well.	Extensive in both backs.	Double.	Vol. 12, p. 184.
52	E. McG., Irish servant wm.	34	Oct. 0.	7	9 days.	Dead.	All of left lung.	Single.	Vol. 11, p. 29.
53	P. McL., Irish machinist.	28	Oct. 29.	21	35 days.	Well.	Lower 2-3 of right lung, lower 1-3 of left.	Double.	Vol. 11, p. 69.
54	J. M., Irish painter.	20	Nov. 1 .	4	64 days.	Well.	Lower half right chest.	Single.	Vol. 11, p. 103.
55	N. M. L., Canadian laborer.	50	Nov. 28.	14	35 days.	Well.	Most of left lung, lower 3-4.	Single.	Vol. 14, p. 110.
56	T. G. O'S., Irish advert. agent.	26	Dec. 3.	4	30 days.	Well.	3-4 of right lung.	Single.	Vol. 11. p. 159.
57	D. O., Irish laborer.	30	Dec. 7.	7	95 days.	Well.	Most of right lung, lower half of left.	Double.	Vol. 11, p. 194.

(*Continued.*)

Complication.	Treatment.	Remarks.	By whom treated.
None.	Simple cough mixture.		J. G. Blake.
None.	Quinine, stimulants, and nourishing food.	Highest rate of pulse, 108.	J. G. Blake.
Debility from privation, and chronic rheumatism.	Carbonate of ammonia and stimulation.	The disease supervened upon its complications.	W. W. Morland.
None.	Brandy, sherry, milk, beef tea.	Excessively debilitated. P. 100 to 108, threadlike, for some days after entrance.	J. G. Blake.
None.	Wine whey, beef tea, &c., with fever mixture.	Highest pulse, 120; highest resp. 60.	J. G. Blake.
None.	Wine whey, sherry and stimulants; expectorants in last part of treatment.	P. 116—good constitution.	F. E. Oliver.
None.	Sulphate of morphia., ¼ gr. at night.	Pulse 84 at entrance.	F. E. Oliver.
Acute bronchitis.	Expectorants, with hyoscyamus and camphor at night.		F. E. Oliver.
None.	Liberally stimulated and fed; morphia p. r. n.	P. 116, feeble at entrance; resp. 28. Sore throat: symptoms resembling diphtheria.	J. P. Reynolds.
12 days before pneumonia, fell from stage and dislocated arm, &c.	Sherry brandy, beef tea, Dover's powders, &c.	Disease perfectly demonstrated, but could not be defined from his surgical condition.	J. P. Reynolds.
From gen'l appearance and co-existence of diarrhœa, complicated with typhoid.	Milk punch and chalk mixture.	P. at entrance, 124, weak.	F. E. Oliver.
None.	Warmth and hot fomentation to chest; at night this Pill: Ext. hyos., conii, camphor, aa gr. ij. M.	P. one evening 116, and temp. 104°; pulse soon fell to a rate of 64 to 68, and temp. of 98.	F. E. Oliver.
Typhoid fever.	Jacket poultices, milk punch, beef tea, with ol. morrhuæ and tr. ferri chlor. for last half of illness.		F. E. Oliver three weeks, afterwards J. N. Borland.
None.	Quinine, brandy, morphia, baths.	Greatly exhausted at entrance. Pulse 80; resp. 20.	J. B. Upham.
None.	Expectorant syrups, with tr. opii camph.; milk punch and some liberal food.	At entrance, pulse 96; resp. 44; temp. 104.	J. N. Borland.
	Stimulated strongly, jacket poultices, expectorants.	P. in early part of case, about 108 to 112. Temp. 102 to 104.	J. N. Borland.

(*Continued.*)

No. of Case.	Name and Occupation.	Age.	Date of Entrance.	No. of days sick before Entrance.	Whole duration of disease.	Result.	Locality of Disease.	Single or Double.	Vol. and page of Record.
58	E. D., Irish laundress.	51	1866. Dec. 19.	3	30 days.	Well.	Lower 2-3 right and lower half left back.	Double.	Vol. 11, p. 253.
59	C. W., Irish laborer.	60	Dec. 22.	2	66 days.	Well.	Lower half both backs.	Double.	Vol. 11, p. 264.
60	M. B., Irish laborer.	35	1867. Jan. 31.	12	49 days.	Well.	Posterior part of left lung.	Single.	Vol. 13, p. 92.
61	J. S., Irish serv. woman.	70	Feb. 2.	7	41 days.	Well.	Lower 3d both lungs.	Double.	Vol. 16, p. 44.
62	M. H., American copyist wom.	26	Feb. 2.	14	43 days.	Well.	Lower half right back.	Single.	Vol. 16, p. 46.
63	D. F., Irish laborer.	38	Feb. 6.	8	39 days.	Well.	Lower half left lung.	Single.	Vol. 16, p. 52.
64	J. H., Eng. nursery girl.	19	Feb. 7.	0	37 days.	Well.	All but upper part left lung.	Double.	Vol. 13, p. 134.
65	A. H., Irish cook maid.	40	Mch. 20.	52	8 days.	Well.	Lower half right lung.	Single.	Vol. 13, p. 244.
66	R. M. D., Irish servant girl.	28	Mch. 23.	40	21 days.	Well.	Lower 2-3 right back.	Single.	Vol. 16, p. 214.
67	M. B., Irish laborer.	49	Mch. 25.	4	13 days.	Dead.	Both backs, right side worst.	Double.	Vol. 13, p. 250.
68	P. de G., Italian barber.	29	Mch. 26.	7	25 days.	Dead.	Nearly all left, lower 2-3 right.	Double.	Vol. 16, p. 218.
69	T. L., Irish tailor.	30	April 3.	1	23 days.	Well.	Entire left back.	Single.	Vol. 15, p. 2.

(*Continued.*)

Complication.	Treatment.	Remarks.	By whom treated.
Broken ribs from accident two weeks previously.	Beef tea, milk punch.		J. N. Borland.
Broken leg and erysipelas.	Leadwash to erysipelas, beef tea, and punch to contain 8 oz. brandy in 24 hours, to be given every 2 hours.	Had been in hospital 9 w.; admitted a surg. patient—run over by cart and left tibia broken. Erysipelas commenced day before pneum.	J. N. Borland.
None.	Wine whey, or beef tea oz. ij. every two hours; oz. viii. wine daily; expectorant mixture.	Patient of delicate health, and subject for years to a cough in winter; in early part of case had some painless diarrhœa.	J. N. Borland.
None.	Oz. vi. brandy in milk punch daily; broths and beef tea; frictions to side twice daily; flax-seed tea to drink, and Dover's powders.	Was retained in hosp. after her pneumonia, to be treated for prolapsus uteri.	J. B. Upham.
Pelvic Cellulitis.	Cough syrups and alcoholic and food stimulation.	P. 120 to 140 at ent.; was retained 6 w. after pulmonic symptoms disappeared, because of pelvic cellulitis. Discharged well.	J. B. Upham.
None.	Antimonial cough syrup; brandy, oz. viii. a day, and beef essence ad libitum.	P. 92; resp. 36.	J. B. Upham.
Acute rheumatism and measles, probably some tubercular deposit.	Cod-liver oil and tr. iron; jacket poultices; broths, wine whey, &c.; ligation of extremities for excessive dyspnœa.	Was admitted for acute rheumatism; pneumonia came on in four days; in ten more eruption of measles appeared with apparent relief to pneumonia, which in turn became more severe as the eruption faded. Suffering from orthopnœa was excessive. Highest pulse rate 112. Respiration 52. Temperature never above 102. The whole illness was about 7 months; but she recovered so as to be able to renew her life as a nursery maid.	J. N. Borland.
Intermittent fever.	Wine, nourishing food and comp. tinct. cinchona.		J. N. Borland and W. W. Morland.
None.	Morphine p. r. n.; opiated jacket poultices, stimulants.	Pulse 124, steady rate; rational signs generally same. Temp. never over 102.	J. B. Upham.
Injured by fall, and pleurisy.	Sherry, beef tea, jacket poultices, brandy and carbonate ammonia.	Delirious throughout case; injured by fall 10 days before ent.; was transf'd from surgical dept. P. 100 at entrance & 160 before death. Resp. 40 to 50; temp. 103 to 104.	J. N. Borland.
None.	Opiated jacket poultices, brandy punch, soups, sedatives.	P. 136 at entrance; resp. 52; temp. 103; violently delirious at times.	J. B. Upham and J. G. Blake.
None.	Sherry, jacket poultices, sedatives for cough.	Pulse 96, full, bounding; resp. 24; highest rate of pulse, 112.	W. W. Morland.

(*Continued.*)

No. of Case.	Name and Occupation.	Age.	Date of Entrance.	No. of days sick before Entrance.	Whole duration of disease.	Result.	Locality of Disease.	Single or Double.	Vol. and page of Record.
70	S. C., Irish servant girl.	23	1867. May 20.	3	20 days.	Well.	Lower half left lung.	Single.	Vol. 15, p. 142.
71	M. L., Irish laborer.	19	Aug. 10.	28	41 days.	Well.	Lower portion each back.	Double.	Vol. 17, p. 80.
72	J. D., Canadian carpenter.	23	Oct. 1.	6	32 days.	Well.	Lower half left lung.	Single.	Vol. 17, p. 212.
73	L. B., French mirror mak.	42	Oct. 10.	21	26 days.	Dead.	All right lung except extreme apex, and lower part left.	Double.	Vol. 17, p. 40.
74	M. H., American seamstress.	37	Oct. 16.	11	21 days.	Well.	Lower left back.	Single.	Vol. 17, p. 252.
75	B. G., New Bruns. carpenter.	24	Nov. 15.	14	26 days.	Well.	Lower half right lung.	Single.	Vol. 19, p. 62.
76	P. H., Irish laborer.	26	Nov. 30.	30	46 days.	Well.	Lower half right back.	Single.	Vol. 19, p. 90.
77	W. F., American laborer.	30	Dec. 3.	24	51 days.	Well.	Lower half right lung.	Single.	Vol. 22, p. 222.
78	R. G., Irish laborer.	23	Dec. 10.	6	33 days.	Well.	Lower 2-3 right lung, lower 1-3 left.	Double.	Vol. 19, p. 132.
79	O'B. K., Irish laborer.	25	Dec. 14.	21	94 days.	Well.	3-4 left lower chest, 1-3 right lower.	Double.	Vol. 22. p. 260.
80	J. M'D., Irish porter.	37	Dec. 21.	1	29 days.	Well.	Lower half right lung.	Single.	Vol. 24, p. 16.
81	J. N., New Bruns. plasterer.	22	Dec. 23.	5	28 days.	Well.	Nearly all right lung.	Single.	Vol. 19, p. 172.
82	D. D., American cigar maker.	25	Dec. 24.	7	60 days.	Well.	Right lung below spine of scapula.	Single.	Vol. 19, p. 180.
83	F. M., American auctioneer.	39	Dec. 25.	3	31 days.	Well.	Lower 3-4 left back, lower half right base.	Double.	Vol. 27, p. 40.
84	F. D. F., American carpenter.	22	1868. Jan. 1.	12	51 days.	Well.	Left lower back.	Single.	Vol. 24, p. 66.

(*Continued.*)

Complication.	Treatment.	Remarks.	By whom treated.
None.	Cough sedatives; sherry, oz. viii. in day; beef tea, &c.	Preceded by one week malaise.	W. W. Morland.
None.	Blisters; iodide of potassium; during last part of disease sedatives for cough.	Sub-acute form of disease.	F. E. Oliver.
None.	Milk, beef tea, jacket poultices; pill of hyoscyamus and camphor every night; blisters in latter part of treatment.	Diseased lung in stage of hepatization at entrance. P. 104, highest rate; resp. 32.	F. E. Oliver.
None.	Stimulants; pill of hyoscyamus and camphor.	Gray hepatization in both lungs, but older form in right, where it has gone on to forming gangrenous abscesses from size of pea to English walnut.	F. E. Oliver.
None.	Milk, beef tea, jacket poultices; pill of hyoscyamus and camphor.	P. 84, weak; resp. 24. Inherited phthisis; disease induced by over work.	F. E. Oliver.
None.	Blisters.	Highest rate of p. was at entrance 96; lung in a state of hepatization, and painful.	F. E. Oliver.
Probably a tubercular development coexisting.	Glycerine dr. i. and fluid ext. cubebs gtt. vi., with mist. morrhua oz. ss., and tr. ferri chlorid. gtt. x. Astringent gargles.	P. 108, weak at entr.; resp. 20.	J. N. Borland.
None.	Jacket poultices, Dover's powders, quinine.	P. 108; much exhausted at entrance, had been ill with "fever" some weeks in autumn.	J. B. Upham.
None.	Jacket poultices, milk and beef tea; during the worst part of the case 7 oz. brandy daily in addition to milk and beef tea, with 5 grs. carbonate of ammonia every 3 hours.	Case of great severity and typhoidal character; pulse for several days rating at 48; morning temperature 103.5°.	J. N. Borland.
Bronchitis, and probably some tuberculous trouble.	Nutritious diet, poultices, stimulating liniments, &c. to chest. Quinine.		J. B. Upham.
Slight amount of pleurisy.	Glycerine and fluid ext. cubebs; stimulating liniment and blister to chest.		J. B. Upham.
None.	Poulticing and stimulation, and 6 drops wine antimony in water every hour.	Resp. 28; pulse 68, weak at entrance.	J. N. Borland.
Pleurisy.	Lung sedatives, nutrition, stimulants, cod-liver oil, blisters.		J. N. Borland.
None.	Opiates and stimulants; poultices to chest.		J. B. Upham.
None.	Poultices, wine whey, glycerine, cubebs and paregoric mixture.	Had just been discharged well from a case of typhoid fever.	J. B. Upham.

(*Continued.*)

No. of Case.	Name and occupation.	Age.	Date of Entrance.	No. of days sick before Entrance.	Whole duration of disease.	Result.	Locality of Disease.	Single or Double.	Vol. and page of Record.
85	W. N., Irish laborer.	51	1868. Jan. 6.	0	50 days.	Nearly well.	Lower 3d of left and extreme base of right.	Double.	Vol. 24, p. 82.
86	J. K., American schoolboy.	12	Jan. 9.	4	15 days.	Relieved	Lower 1-4 right lung.	Single.	Vol. 19, p. 248.
87	W. T., American tobacco presser.	24	Jan. 21.	7	29 days.	Well.	Lower half of right.	Single.	Vol. 24, p. 124.
88	C. B., Swedish bookbinder.	27	Jan. 24.	5	36 days.	Well.	Lower halves both backs.	Double.	Vol. 24, p. 142.
89	J. N., Irish laborer.	20	Jan. 30.	6	45 days.	Well.	2-3 lower right, 1-3 lower left back.	Double.	Vol. 24, p. 84.
90	J. N., Irish billsticker.	17	Feb. 3.	6	40 days.	Well.	Right lung through.	Single.	Vol. 21, p. 124.
91	P. F., Irish laborer.	23	Feb. 8.	8	24 days.	Well.	Lower third of both backs.	Double.	Vol. 24, p. 208.
92	J. C., American laborer.	18	Feb. 11.	12	24 days.	Well.	Left back, very extensive.	Single.	Vol. 21, p. 142.
93	A. S., Irish tailoress.	20	Feb. 17.	4	47 days.	Well.	Whole of left lung.	Single.	Vol. 21, p. 162.
94	M. W., American chamber maid.	15	M'ch 11.	14	49 days.	Well.	Whole of right lung.	Single.	Vol. 26, p. 80.
95	J. D., Irish laborer.	49	M'ch 28.	14	39 days.	Well.	Lower 2-3 of right back.	Single.	Vol. 26, p. 158.
96	D. S., Irish schoolboy.	14	Ap'l 1.	15	39 days.	Relieved	Whole of left back.	Single.	Vol. 26, p. 182.
97	M. S., Irish laundress.	53	Ap'l 1.	7	34 days.	Well.	Lower third of left back.	Single.	Vol. 26, p. 190.

(*Continued.*)

Complication.	Treatment.	Remarks.	By whom treated.
Debilitated, and had had fever seven weeks previous to admission to hospital. Was a-bed from 2 to 3 weeks.	Chiefly by small blisters.	Developed in hospital.	J. B. Upham.
None.	Poultices, beef tea, milk, tincture of hyoscyamus at night.	Doing well, up and about, as proved by his having eloped.	J. N. Borland.
None.	Spt. Mindereri dr. i. every 2 hours; Dover's powders, jacket poultices, beef tea, milk punch.		J. B. Upham.
None.	Poultices, Dover's powders, egg-nog, brandy, quinine.		J. B. Upham.
None.	Jacket poultices, egg-nog, brandy, Dover's powders.	P. at entrance, 108; resp. 28.	J. B. Upham.
None.	Milk, milk punch, beef tea and carbonate ammonia.	Markedly typhoidal condition. Highest rate of pulse, 116; resp. 44; temp. 104.	J. N. Borland.
None.	Dover's powders and milk punch.		J. B. Upham.
Twelve days after admission there were marked indications of phthisis involving both lungs.	Glycerine and paregoric mixture; milk punch, cod-liver oil.	P't was disch'd six weeks after entrance, well of pneumonia; but with rational and physical signs of phthisis well marked. Mother and brother died of same disease.	J. N. Borland.
Phthisis.	Milk, beef tea, glycerine and paregoric mixture; jacket poultice, cod-liver oil and whiskey.	For two years had worked very hard, living in a damp locality, and for 4 months before entering the Hospital, had all the rational symptoms of phthisis.	J. N. Borland.
None.	Dover's powders, jacket poultice, fever mixture; brandy, carbonate of ammonia, sherry, quinine; jacket poultice omitted during 2d week, and hop fomentations substituted.	Highest rate of pulse, 140. Constant pain in right breast.	J. B. Upham.
None.	Jacket poultice, milk punch, beef tea, quinine, arom. sulphuric acid; cotton batting substituted for poultice after six days.		J. B. Upham.
Probably phthisis.	Expectorants, quinine, sherry, cod-liver oil.	Parents died of phthisis. Disease first manifested itself by pain in left chest, dyspnœa and dry, hacking cough. P't always well until 3 weeks before entrance.	J. G. Blake.
Phthisis.	Expectorants and tonics.	Had suffered from debility and cough arising from exposure six months previously.	J. G. Blake.

(*Continued.*)

No. of Case.	Name and Occupation.	Age.	Date of Entrance.	No. of days sick before Entrance.	Whole duration of disease.	Result.	Locality of Disease.	Single or Double.	Vol. and page of Record.
98	B. D., Irish laundress.	55	1868. Apr. 7.	14	33 days.	Dead.	Lower 2-3 of left, and lower third of right lungs.	Double.	Vol. 26, p. 227.
99	F. S., Colored servant girl.	14	Apr. 16.	10	46 days.	Well.	Middle lobe of right lung.	Single.	Vol. 23, p. 240.
100	J. B., Irish laborer.	24	Apr. 17.	5	18 days.	Well.	Lower third of right back, whole of right front.	Single.	Vol. 23, p. 246.
101	T. D., American bricklayer.	17	Apr. 21.	6	37 days.	Well.	Whole of left lung.	Single.	Vol. 28, p. 20.
102	C. C., Irish (fem.) storekeeper.	55	Apr. 24.	14	31 days.	Not rel'd.	Whole of left back; lower half of right.	Double.	Vol. 28, p. 40.
103	M. M., Irish servt. woman.	24	Apr. 24.	10	37 days.	Well.	Lower half of right back.	Single.	Vol. 25, p. 32.
104	J. N., Irish laborer.	29	Apr. 27.	Not stated.	Not stat'd.	Dead.	Not stated.	Not stated.	Vol. 28, p. 56.
105	M. F., Irish servant girl.	22	Apr. 29.	0	27 days.	Dead.	Lower half of both backs.	Double.	Vol. 28, p. 74.

(*Continued.*)

Complication.	Treatment.	Remarks.	By whom treated.
Renal disease.	Beef tea, milk, brandy, bromide of potassium, sinapisms, whiskey, quinine, ext. wild cherry bark and morphine.	Pulse remained about 88, very feeble. Patient was apparently improving, but died during a sudden attack of dyspnœa which had previously occurred frequently during the disease.	J. G. Blake.
None.	Jacket poultice, milk, beef tea, with a cough syrup.		H. I. Bowditch.
Pericarditis developed itself the second day after entrance, and soon became general. This had nearly disappeared after 8 days. At that time fine crepitus was detected beneath left axilla, but disappeared after 24 hrs.; pericarditis again immediately ensuing.	Whiskey, Dover's powders, warmth to chest, brandy, milk, beef tea.	Had an attack of pneumonia before this 8 years ago. Pericarditis continued 2 weeks after pneumonia was well. Systolic aortic murmur remained when patient was discharged.	H. I. Bowditch.
Pleurisy.	Jacket poultice, milk punch, Dover's powders, fever mixture, iron and quinine the last two weeks.	P. 100. Resp. 40.	J. G. Blake.
Cardiac disease, and possibly pleurisy.	Opiates, expectorants, fever mixture, ale, wine, counter-irritants, carbonate of ammonia, gin.	Had an attack of rheumatism, continuing six months, two years before. Became greatly exhausted in consequence of constant dyspnœa, and at own request was discharged.	J. G. Blake.
None.	Jacket poultice, milk, beef tea, sweet spirits of nitre, Dover's powders.	Highest rate of pulse, 108. Temp. 995°.	H. I. Bowditch.
None.	Milk and beef tea. Jacket poultice, fever mixture, Dover's powders, brandy, quinine, carbonate of ammonia.	P. ranged from 100 to 146; resp. from 44 to 56. Delirious throughout case.	J. G. Blake.
Acute rheumatism, endo and pericarditis.	Jacket poultice, stimulants and opiates.	Was admitted for acute rheumatism; pneumonia supervened in 12 days, affecting left back, and appeared on right side one week later. Cardiac complications ensued the day after entrance. Disease proved fatal during a second attack of pericarditis; suffering from orthopnœa excessive.	J. G. Blake.

(*Continued.*)

No. of Case.	Name and Occupation.	Age.	Date of Entrance.	No. of days sick before entrance.	Whole duration of disease.	Result.	Locality of Disease.	Single or Double.	Vol. and page of Record.
106	P. C., Irish laborer.	28	1868 Apr. 30.	10	32 days.	Well.	Lower half of left lung.	Single.	Vol. 28, p. 78.
107	J. B., American hostler.	22	May 7.	4	33 days.	Well.	Lower 2-3 of right lung, lower 1-3 of left back.	Double.	Vol. 28, p. 88.
108	J. J., American laborer.	32	May 9.	6	16 days.	Well.	Lower half of left back.	Single.	Vol. 25, p. 116.
109	M. M., Amer. marble worker.	25	May 16.	6	26 days.	Well.	Lower half of left lung, base of right back.	Double.	Vol. 28, p. 144.
110	J. B., Irish laborer.	22	May 18.	7	16 days.	Well.	Lower half of left lung.	Single.	Vol. 25, p. 148.
111	E. C., American servant girl.	24	May 21.	6	34 days.	Well.	Both lower backs.	Double.	Vol. 28, p. 156.
112	H. N., Canadian teamster.	20	May 28.	8	12 days.	Dead.	Lower 2-3 of left lung, lower 1-2 of right.	Double.	Vol. 28, p. 190.
113	M. F., Irish laborer.	26	May 23.	9	22 days.	Well.	Lower half of right lung.	Single.	Vol. 28, p. 170.
114	J. G., Irish laborer.	28	June 5.	5	48 days.	Well.	Lower half of both backs.	Double.	Vol. 28, p. 226.
115	K. M., Irish servant girl.	26	June 18.	0	30 days.	Well.	Lower half of both backs.	Double.	Vol. 27, p. 94.

(*Continued.*)

Complication.	Treatment.	Remarks.	By whom treated.
None.	Fever mixture, Dover's powders, sinapism to chest twice daily; whiskey, iron during the last week. Jacket poultice after the first three days.	Mild delirium of two days' duration, commenced five days after entrance.	J. G. Blake.
None.	Jacket poultice, fever mixture, Dover's powders, milk, beef tea, stimulants.	Highest rate of pulse, 120; temp. 105.5° three days after entrance; two days later fell to 99.5°.	J. G. Blake.
Pleurisy.	Jacket poultice, sherry wine, Dover's powders, cough syrup.	Had suffered from cough for four months previously but no pain in chest until pneumonia developed itself.	H. I. Bowditch.
None.	Jacket poultice, sweet spts. of nitre, wine, expectorants, milk, beef essence.	P. at no time above 84; resp. 44 at entrance.	J. G. Blake.
None.	Jacket poultice, milk, beef tea, wine, quinine, Dover's powder at night.		J. G. Blake.
Phthisis.	Expectorants, wine 8 oz. daily; quinine, cod-liver oil and whiskey, stimulating liniments to chest, milk and beef essence.	Sub-acute form.	J. G. Blake.
Diarrhœa.	Jacket poultice, Dover's powder, expectorants, brandy, milk, beef essence, quinine, carbonate of ammonia, astringents.	P't strained himself by heavy lifting two days before commencement of pneumonia; p. 112; resp. 52 at time of entrance. Frequent greenish liquid discharges occurred throughout the case. P't rapidly failed and became moribund three days after entrance.	J. G. Blake.
Pleurisy.	Jacket poultice, expectorants, quinine, brandy, egg, beef essence, milk, Dover's powder at nights.	Had an attack of pneumonia before this, six months ago.	J. G. Blake.
Rheumatism.	Jacket poultice, fever mixture, wine, Dover's powder, milk, beef essence, expectorants, quinine during the last ten days.	Rheumatism commenced at the same time as the pneumonia, and existed as a complication throughout the case. P. 128; resp. 40 at time of entrance; highest resp. 60. Expectoration scanty, of a tenacious, rusty character, and attended with much difficulty.	J. G. Blake.
Rheumatism and pericarditis.	Jacket poultice, brandy oz. viii., milk, carbonate of ammonia, elixir opium.	Was admitted for ac. rheumatism; pericarditis supervened in three weeks, pneumonia four days later: highest pulse rate, 148; resp. 40; was discharged well of pneumonia, but only partially relieved of rheumatism; — taken away by friends.	H. I. Bowditch and F. E. Oliver.

(*Continued.*)

No. of Case.	Name and Occupation.	Age.	Date of Entrance.	No. of days sick before Entrance.	Whole duration of disease.	Result.	Locality of Disease.	Single or Double.	Vol. and page of Record.
116	B. G., Irish servant-girl.	15	1868. Juue 22.	6	27 days.	Well.	Whole of right luug.	Single.	Vol. 30, p. 22.
117	T. C., Irish baker.	21	June 26.	5	23 days.	Well.	Lower half of right back.	Single.	Vol. 27, p. 154.
118	M. B., Irish house-keeper.	28	July 23.	21	41 days.	Rel'd	Lower third of left back.	Single.	Vol. 29, p. 16.
119	M. D., Irish laborer.	55	July 29.	27	39 days.	Well.	Lower third of right back.	Single.	Vol. 29, p. 36.
120	A. S., German nurse.	20	Aug. 4.	4	26 days.	Well.	Lower half of right back.	Single.	Vol. 29, p. 60.
121	J. W., American machinist.	48	Sept.10.	40	59 days.	Well.	Lower third of left back.	Single.	Vol. 29, p. 222.
122	M. T., American seamstress.	16	Sept.14.	4	25 days.	Well.	Middle third of right back.	Single.	Vol. 29, p. 232.
123	A. G., American upholsterer.	24	Sept.16.	4	23 days.	Well.	Lower half of left back.	Single.	Vol. 29, p. 242.
124	D. M., American carriage maker	29	Sept.22.	8	21 days.	Well.	Base of right back.	Single.	Vol. 31, p. 6.
125	W. B., American laborer.	34	Oct. 15.	3	23 days.	Well.	Whole of left lung, and lower h'f of right back.	Double.	Vol. 31, p. 82.
126	A. S., Colored laborer.	19	Oct. 21.	5	27 days.	Well.	Whole of right lung, and lower half of left back.	Double.	Vol. 31, p. 98.
127	T. S., Irish laborer.	18	Oct. 27.	2	17 days.	Well.	Whole of right lung.	Single.	Vol. 31, p. 126.
128	D. S., Irish laborer.	37	Oct. 31.	13	41 days.	Well.	Lower half of left lung.	Single.	Vol. 34, p. 66.
129	M. M., Irish servant girl.	22	Oct. 31.	14	44 days.	Well.	Lower half of both backs.	Double.	Vol. 31, p. 152.
130	H. H., Norwegian fresco painter.	19	Nov. 5.	2	9 days.	Well.	Lower half of right back.	Single.	Vol. 31, p. 178.

(*Continued.*)

Complication.	Treatment.	Remarks.	By whom treated.
None.	Jacket poultice, fever mixture, milk, beef tea, wine whey.	P. 132; resp. 44 at entrance. Highest resp. 56; temp 103.5°, two days after ent. fell to 98.5°, with but slight subsequent variation.	J. G. Blake.
None.	Jacket poultice, cough syrup p.r.n., milk, beef tea, tinc. of columbo, wine, oz. iv. during the last week.	P. 96. resp. 16 at time of entrance.	H. I. Bowditch and F. E. Oliver.
Incip. phthisis.	Jacket poultice, milk, morphine, gr. $\frac{1}{4}$ at night.	Cough commenced six weeks before entrance.	F. E. Oliver.
None.	Rest, milk diet.	P. 68, resp. 24 at entrance.	F. E. Oliver.
None.	Jacket poultice, Dover's powders, bromide of potassium, swt. spts. nitre, milk, broths.	P. 108 strong, resp. 28, temp. 103.5° at entrance; temp. became normal five days later.	F. E. Oliver.
Dyspepsia.	Rest, milk diet; morphine, gr. $\frac{1}{8}$, p. r. n.	Sub-acute form of disease.	F. E. Oliver.
Diarrhœa.	Milk diet, bromide of potassium, blister, ferrated tinct. of cinchona; quinine and wine during the last week.	P. 84, resp. 24 at time of entrance.	F. E. Oliver.
None.	Jacket poultice, milk diet.	P. 120, strong; resp. 40 at time of ent.; on the following day pulse became 84, resp. 20, temp. normal.	F. E. Oliver.
None.	Bromide of potassium at night; milk diet.		F. E. Oliver.
None.	Jacket poultice, milk diet.	P. 116, resp. 48, temp 104° at entrance, P. remained steady at 56 after the tenth day.	F. E. Oliver.
None.	Jacket poultice, opiates, gin, milk and beef tea.	Disease first developed itself at right apex. P. 112, temp. 105° at ent.; highest resp. 44; mild delirium manifested itself six days after admission, and continued three days.	F. E. Oliver.
None.	Jacket poultice, bromide of potassium at night, ext. hyoscyamus, gr. ii, 2 t. d., wine, milk; cod-liver oil and whiskey in latter part of treatment.	Pt. had but recently recovered from a mild attack of pneumonia.	F. E. Oliver and J. N. Borland.
None.	Dover's powders, compound tincture of cinchona, quinine.		J. G. Blake.
None.	Flannel about chest, expectorant mixture, wine, cod-liver oil and whiskey.	During the four weeks preceding the commencement of pneumonia had suffered from gen'l febrile symptoms.	J. N. Borland.
None.	Jacket poultice, bromide of potassium, swt. spts. of nitre, milk and broths ad. libitum.	P. 108, strong; resp. 28, temp. 103° at ent.; two days later p. and temp. became normal; but little variation subsequently occurred.	J. N. Borland.

(*Continued.*)

No. of Case.	Name and Occupation.	Age.	Date of Entrance.	No. of days sick before Entrance.	Whole duration of disease.	Result.	Locality of Disease.	Single or Double.	Vol. and page of Record.
131	J. D., Irish laborer.	34	1868 Nov. 9.	14	32 days.	Well.	Lower half of right back.	Single.	Vol. 31, p. 206.
132	J. D., Irish laborer.	33	Nov. 11.	10	27 days.	Well.	Lower half of both backs.	Double.	Vol. 31, p. 210.
133	B. V., Irish serv't woman.	52	Nov. 12.	0	15 days.	Well.	Lower half of right front.	Single.	Vol. 31, p. 214.
134	K. B., English hair-dresser.	28	Nov. 14.	19	44 days.	Well.	Lower half of right back.	Single.	Vol. 31, p. 222.
135	B. R., Irish servant girl.	20	Nov. 22.	3	63 days.	Rel'd.	Lower 2-3 of right back.	Single.	Vol. 31, p. 256.
136	W. F., Irish laborer.	57	Dec. 10.	6	16 days.	Well.	Middle third of right back.	Single.	Vol. 34, p. 214.
137	C. B., Irish servant girl.	27	Dec. 16.	7	26 days.	Well.	Lower half of each back.	Double.	Vol. 34, p. 250.
138	S. M., Irish servant girl.	25	Dec. 19.	21	69 days.	Well.	Lower half of left lung.	Single.	Vol. 36, p. 6.
139	P. B., Irish laborer.	35	Dec. 24.	3	24 days.	Well.	Whole of left lung, and posterior base of right.	Double.	Vol. 36, p. 32.
140	M. C., Irish servant girl.	23	Dec. 28.	10	18 days.	Well.	Whole of left lung.	Single.	Vol. 33, p. 144.
141	M. F., English housekeeper.	38	Dec. 31.	29	21 days.	Dead.	Not determined, owing to condition of patient.	Double.	Vol. 33, p. 170.
142	G. B., American laborer.	18	1869 Jan. 11.	5	33 days.	Well.	Whole of right lung; lower 2-3 of left.	Double.	Vol. 36, p. 142.

(*Continued.*)

Complication.	Treatment.	Remarks.	By whom treated.
Pleurisy.	Jacket poultice, Dover's powder, grs. v. every six hours; wine whey, citrate of iron, quinine.	Disease manifested itself immediately after a strain arising from heavy lifting.	J. N. Borland.
Pleurisy.	Jacket poultice, bromide of potassium, wine, oz. vi. daily; cod-liver oil, whiskey and iron; external application of tr. iodine.	Patient somewhat delirious at time of entrance, but became rational on the fourth day.	J. N. Borland.
Rheumatism.	Counter irritation, bromide of potassium, tr. of lupulin, solid food.	Patient had cough and expectoration for 3 weeks before entrance, but no physical signs of pneumonia appeared until 3 days after admission.	J. N. Borland.
Pleurisy.	Counter irritation, expectorants, tr. of iron during the last ten days.		J. N. Borland.
Sequelæ of typhoid fever.	Jacket poultice, bromide of potassium, cod-liver oil, emulsion, whiskey, milk, broths ad lib., and a pill of quinine, digitalis and opium, during the last month.	Patient when present sickness began, was suffering from debility consequent upon typhoid fever.	J. N. Borland.
Intermittent fever and slight pleurisy.	Jacket poultice, Dover's powders, quinine, liquid diet.	Was retained in hospital five weeks for intermittent fever, after pneumonia was well.	A. D. Sinclair.
Scarlatina and Herpes Zoster.	Jacket poultice, Dover's powder, fever mixture, quinine.	Patient remained in hospital four weeks after pneumonia was well, for sequlæ of scarlet fever.	A. D. Sinclair.
Pharyngitis.	Ferraginous tonics, Dover's powder gr. x, p. r. n.	Mild, sub-acute form of disease.	A. D. Sinclair.
Slight pleurisy.	Jacket poultice, Dover's powder grs. v. every four hours, brandy, counter irritation, liquid diet.	Disease commenced at apex of left lung; right lung became affected four days after entrance. Highest rate of p. 114; temp. 104.5°; resp. 40.	A. D. Sinclair.
Phthisis.	Bromide of potassium, glycerine, elixir of opium, jacket poultice, sherry wine.	Patient was greatly reduced by over-work; severe hæmoptysis the day before entrance; delirious during the whole case; p't. when well of pneumonia was sent to insane asylum.	J. N. Borland.
Phlegmasia alba dolens.	Jacket poultice, milk, beef tea, stimulants ad lib., cough mixture, morphine, gr. ¼ p. r. n.	Complication ensued 3 days after entrance; p't. excessively anæmic, and able to lie only on right side when admitted. Death from exhaustion.	J. N. Borland.
None.	Jacket poultice, Dover's powder, p. r. n., milk, beef essence, brandy, carbonate of ammonia, quinine during the last two weeks.	Mental condition had been much depressed for 3 weeks before commencement of pneumonia. At time of entrance p. 120, resp. 60, temp. 105°; highest resp. 70. Delirium supervened on the evening of admission and continued for four days.	A. D. Sinclair.

(*Continued.*)

No. of Case.	Name and Occupation.	Age.	Date of Entrance.	No. of days sick before Entrance.	Whole duration of Disease.	Result.	Locality of Disease.	Single or Double.	Vol. and page of Record.
143	T. M., Nova Scotia tailoress.	19	1869. Jan. 21.	2	43 days.	Rel'd	Upper half of left lung.	Single.	Vol. 36, p. 192.
144	H. S., American chamber maid	19	Jan. 13.	0	8 days.	Well.	Lower half of left back.	Single.	Vol. 35, p. 6.
145	B. K., Irish chamber maid	22	Jan. 15.	0	26 days.	Well.	Lower 2-3 of right back.	Single.	Vol. 35, p. 16.
146	K. T., Newfoundland servant girl.	26	Jan. 16.	4	14 days.	Well.	Lower half of left back.	Single.	Vol. 35, p. 20.
147	O. M., Irish marble cutter.	35	Jan. 27.	14	38 days.	Well.	Lower half of right back.	Single.	Vol. 35, p. 58.
148	H. S., English laborer.	52	Jan. 28.	7	37 days.	Well.	Lower half of right back, and lower third of left.	Double.	Vol. 35, p. 74.
149	G. B. S., Nova Scotia carpenter.	25	Jan. 28.	8	56 days.	Well.	Whole of left lung.	Single.	Vol. 36, p. 224.
150	M. C., Irish laundress.	45	Jan. 28.	21	38 days.	Well.	Lower third of both backs.	Double.	Vol. 35, p. 78.
151	M. R., American girl.	15	Feb. 2.	19	48	Well.	Lower half of both backs.	Double.	Vol. 35, p. 104.
152	M. M., Irish laborer.	63	Feb. 3.	11	42 days.	Well.	Lower third of both backs.	Double.	Vol. 36, p. 246.

(*Continued.*)

Complication.	Treatment.	Remarks.	By whom treated.
Incipient phthisis.	Dover's powder, jacket poultice, milk, beef tea, brandy, quinine; citrate of iron and quinine during the last week.	Pt. had always been feeble; had parotitis seven weeks before pneumonia, with protracted convalescence; had haemoptysis three weeks before entrance. When discharged there were marked signs of phthisis.	A. D. Sinclair.
Chlorosis.	Wine of antimony, gtt. vi. every hour. Milk and beef tea ad lib.	Disease appeared two weeks after entrance.	J. N. Borland.
Bronchitis.	Jacket poultice, carbolic acid and sedative inhalations; cough medicine, citrate of iron and quinine, and wine during the last week. Broths.	Physical signs of pneumonia appeared on the second day after entrance; supervening upon the bronchitic affection.	J. N. Borland.
Rubeola.	Jacket poultice, bromide of potassium, fever mixture, brandy, extr. valerian at night, milk and beef tea ad libitum.	On the morning of entrance pt. was found lying on the floor of her room, with but little covering, and in a delirious condition; delirium continued four days. Highest rate of pulse, 132, resp. 44, temp. 105.5°; was retained in Hospital five weeks after pneumonia was well, for cystitis.	J. N. Borland.
None.	Jacket poultice, wine of antimony, gtt. vi. every hour; milk and beef tea ad lib.	Respiration became free five days after entrance, and condition of patient afterwards was simply that of debility.	J. N. Borland.
Chr. Diarrhœa.	Jacket poultice, comp. squill pill grs. v., 4 t. d., cod-liver oil emulsion, brandy, ferrum red actum, milk, beef tea ad libitum.	Resp. 40, pulse 96; very weak at time of entrance: three days later, pt. unable to speak above a whisper, from excessive weakness; at times twelve dej. daily; was discharged well of pneumonia, and better of diarrhœa than for eight months previously.	J. N. Borland.
None.	Jacket poultice, Dover's powder, milk and beef tea, carbonate of ammonia, quinine during the last 4 weeks.	Mildly delirious at entrance, and remained so for six days. Highest pulse rate, 104, temp. 105°, resp. 52.	A. D. Sinclair.
Chr. bronchitis and rheumatism.	Jacket poultice, cod-liver oil and whiskey; citrate of iron and quinine; wine oz. viii. daily.	Had suffered from bronchitis 3 months before com. of pneumonia. Mild constitutional symptoms.	J. N. Borland.
None.	Sinapisms, jacket poultice, tr. of muriate of iron, cod-liver oil, wine, milk and broths ad lib.; solid food when desired. Dover's powder p.r.n.	Pt. of a scrofulous cachexia, very anæmic and emaciated at time of entrance.	J. N. Borland.
None.	Quinine, Dover's powder, antimonial powder gr. iii. 4 t.d. tr. of muriate of iron during the last two weeks.	Mild sub-acute case.	A. D. Sinclair.

(*Continued.*)

No. of Case.	Name and Occupation.	Age.	Date of Entrance.	No. of days sick before Entrance.	Whole duration of Disease.	Result.	Locality of Disease.	Single or Double.	Vol. and page of Record.
153	M. F., Irish moulder.	50	1869. Feb. 10.	14	49 days.	Rel'd.	Entire left back, below spine of scapula through right.	Double.	Vol. 35, p. 158.
154	P. N., Irish horse-clipper.	26	Feb. 13.	14	36 days.	Well.	Lower half of left back.	Single.	Vol. 55, p. 176.
155	M. M., Irish housekeeper.	27	Feb. 13.	60	74 days.	Well.	Lower half of right back.	Single.	Vol. 55, p. 180.
156	W. F., Irish laborer.	57	Feb. 13.	17	21 days.	Dead.	Lower half of right back; lower 2-3 of left.	Double.	Vol. 38, p. 10.
157	A. C., Irish laborer.	19	Feb. 14.	7	10 days.	Dead.	Whole of right lung; lower 2-3 of left.	Double.	Vol. 35, p. 192.
158	J. K., American salesman.	25	Feb. 16.	5	21 days.	Well.	Below spine of left scapula.	Single.	Vol. 35, p. 208.
159	J. R., Irish servant-wman.	55	Feb. 18.	6	27 days.	Well.	Lower half of right back.	Single.	Vol. 35, p. 228.
160	E. H., American porter.	54	Feb. 21.	5	8 days.	Dead.	Whole of right lung.	Single.	Vol. 38, p. 62.
161	A. T., American dress-maker.	26	Feb. 22.	0	12 days.	Well.	Lower half of left back.	Single.	Vol. 35, p. 250.
162	R. M., American servant-girl.	25	Feb. 25.	14	37 days.	Well	Lower 2-3 of right back; lower third of left.	Double.	Vol. 37, p. 4.
163	K. M., Irish seaman.	23	Feb. 27.	7	34 days.	Well.	Lower 2-3 of right back; lower half of left.	Double.	Vol. 37, p. 16.
164	M. M., Canadian factory-girl.	24	Mar. 5.	3	23 days.	Well.	Lower 2-3 of right back.	Single.	Vol. 38, p. 118.

(*Continued.*)

Complication.	Treatment.	Remarks.	By whom treated.
Phthisis.	Jacket poultice, sinapisms, beef tea, 2 oz. every 2 hours; wine, 8 oz daily; brandy, 6 oz. daily after first week; citrate of iron and quinine in sherry wine during the last month.	Had a cough and pain in left chest for six weeks before entrance; was delirious for three days after admission. Pt's. condition during the first 2 weeks was that of excessive prostration; when disch'd had all the rational & physical signs of phthisis.	J. N. Borland.
	Jacket poultice, milk, beef tea, glycerine and paregoric mixture.	Vomiting and diarrhœa for first 2 days; relieved by morphine and hydrocyanic acid.	J. N. Borland.
None.	Glycerine, citrate of iron and quinine, nourishing food.	Mild sub-acute form of disease.	J. N. Borland.
None.	Jacket poultice, wine of antimony gr. vi. every hour; brandy, carbonate of ammonia, milk and beef essence.	Pt. had but recently recovered from a severe attack of pneumonia; pulse 132; resp. 44; highest resp. 54, and was extremely exhausted at ent.	A. D. Sinclair.
None.	Jacket poultice, milk, beef tea, brandy and carbonate of ammonia gr. v. every hour during the last 24 hours.	Delirious throughout the case, pulse 112, soft.; resp. 44 at entrance; highest resp. 50.	J. N. Borland.
Roseola.	Jacket poultice, bromide of potassium, swt. spts. nitre; wine of antimony gtt. vi. every hour, milk and broths ad lib.		J. N. Borland.
Spinal congestion.	Flannel and dry mustard about chest; rest; wine of antimony gtt. vi. every hour; tinct. of muriate of iron during the last two weeks.	Mild form of disease.	J. N. Borland.
None.	Jacket poultice, wine of antimony gtt. vi. every hour, milk, beef tea, carbonate of ammonia, brandy oz. ss. every hour.	An old man addicted to alcoholic excess, p. 120 intermitting, and resp. 52 at ent.; m'ch dyspnœa, delirium supervened 2 days after admission.	A. D. Sinclair.
Rheumatism and dysuria.	Iodide potassium, elixir opium at night p. r. n.	Retained nearly 2 mos. after pneumonia was well, for dysuria and debility.	J. N. Borland.
Dyspepsia and secondary syphilis.	Jacket poultice, milk, beef tea; a squill, ipecac and opium pill taken 3 t. d. during the first ten days, when cod-liver oil was substituted. Simple cough medicine.	The day after ent. pulse 116; resp. 48; temp. 106.5°; on the fourth day pulse fell to 84 with but little subsequent variation. Pt. was retained in hospital a month after pneumonia was well, for the treatment of specific ulcer'ns	J. N. Borland.
Ac. Synovitis.	Jacket poultice, milk and beef tea ad lib.; cod-liver oil during the last two weeks.	Complication supervened one week after entrance, without any assignable cause. Pneu. trouble produced but mild constitutional disturbance.	J. N. Borland.
None.	Jacket poultice, brandy, carbonate of ammonia, wine of antimony gtt. vi. every hour; milk and beef tea.	Pt. suffered from excessive dyspnœa during the first 3 days of the disease: at time of entrance, great prostration, pulse 104, very weak; resp. 60; two days later pulse fell to 80, & improv't steadily cont.	A. D. Sinclair.

(*Continued.*)

No. of Case.	Name and Occupation.	Age.	Date of Entrance.	No. of days sick before Entrance.	Whole Duration of Disease.	Result.	Locality of Disease.	Single or Double.	Vol. and page of Record.
165	D. W., American laborer.	38	1869, Mar. 11.	14	32 days.	Well.	Lower 2-3 of right lung.	Single.	Vol 38, p. 144.
166	K. M., Irish servant-girl.	21	Mar. 13.	5	18 days.	Dead.	Whole of right lung.	Single.	Vol. 38, p. 152.
167	B. H., Irish machinist.	23	Mar. 16.	4	17 days.	Well.	Whole of right lung.	Single.	Vol. 38, p. 156.
168	J. B., Swedish coppersmith.	29	Mar. 16.	5	25 days.	Well.	Whole of right lung, and left back below spine of scapula.	Double.	Vol. 37, p. 108.
169	A. D., Irish servant-girl.	26	Mar. 17.	6	8 days.	Dead.	Both backs; right more affected than left.	Double.	Vol. 38, p. 164.
170	M. B., Nova Scotia nurse.	68	Mar. 19.	21	49 days.	Well.	Lower half of both backs.	Double.	Vol. 37, p. 122.
171	J. C., Irish teamster.	27	Mar. 24.	4	13 days.	Well.	Whole of left back, lower 2-3 of right.	Double.	Vol. 38, p. 186.
172	F. P., German glass-blower	59	Mar. 25.	21	29 days.	Well.	Lower half of right lung.	Single.	Vol. 37, p. 146.
173	J. D., Scotch tailor.	45	Mar. 27.	4	8 days.	Dead.	Whole of right lung.	Single.	Vol. 38, p. 200.
174	S. D., Irish servant-girl.	18	Mar. 27.	21	60 days.	Well.	Lower half of both lungs.	Double.	Vol. 37, p. 154.
175	J. D., Irish laborer.	49	Apr. 1.	10	21 days.	Dead.	Whole of left lung.	Single.	Vol. 38, p. 212.

(*Continued.*)

Complication.	Treatment.	Remarks.	By whom treated.
None.	Jacket poultice, brandy, oz. ss., and carbonate of ammonia, grs. v., every 3 hours; wine of antimony, gtt. vi. every hour; milk & beef tea.	At time of entrance considerable dyspnœa and great prostration; resp. 40; pulse, 104, temp. 104.5°.	A. D. Sinclair.
None.	Jacket poultice, Dover's powder p. r. n.; wine of antimony, gtt. vi. every hour.	Stout, fleshy girl, first sickness; no expectoration during disease; respiration ranged between 40 and 60; highest pulse rate 126. On the morning of her death first complained of pain in left side, but condition did not admit of physical examination.	A. D. Sinclair.
None.	Jacket poultice, brandy oz. ss., and carbonate of ammonia grs. v. every 4 hours; wine of antimony gtt. vi. every hour; milk, beef tea, Dover's powder grs. x. first night after entrance.	Some delirium previous to entrance; none after.	A. D. Sinclair.
None.	Jacket poultice, bromide of potassium, brandy oz. i. and carbonate of ammonia grs. v. every two hours; syr. phosphate of iron, quinine and strychnia during last week.	Very severe case; delirious during the first five days after entrance; highest pulse rate, 140; resp. 64.	J. N. Borland.
Rheumatism, cirrhosis.	Brandy oz. ss. and carbonate of ammonia grs. v., p. r. n.	*Autopsy.* Base and posterior portion of both lungs congested; cardiac valves thickened; liver of a nutmeg appearance; highest pulse rate, 116; resp. 44; temp. 105°.	A. D. Sinclair.
None.	Cod-liver oil, iron, quinine, glycerine and paregoric mixture; nourishing food.	Sub-acute form of disease in an old person.	J. N. Borland.
None.	Jacket poultice, Dover's powder grs. x. the first night; brandy oz. ss. and carbonate of ammonia grs. v. every 3 hours; wine of antimony gtt. vi. every hour, milk and beef tea.	Considerable dyspnœa during early part of disease; highest pulse rate, 116; resp. 52; temp. 103°.	A. D. Sinclair.
None.	Jacket poultice, citrate of iron and quinine; sherry wine.	Mild, sub-acute case.	J. N. Borland.
Vomiting.	Jacket poultice, warmth to extremities, Dover's powder, brandy oz. i. and carbonate of ammonia grs. v. every 3 hours; wine of antimony gtt. vi. every hour.	Patient greatly prostrated at entrance; pulse, 140, weak; extremities cold; intense pain in right side; highest resp., 32.	A. D. Sinclair.
Pleurisy.	Jacket poultice, glycerine and paregoric, sherry wine oz. viii. daily; opium; milk and beef tea ad libitum.	Had suffered from a cough, two months before entrance.	J. N. Borland and H. I. Bowditch.
Bronchitis.	Jacket poultices, sedative expectorants; brandy oz. vi. daily; bromide of potassium.	Patient delirious at close of disease. Died from prostration.	A. D. Sinclair and J. G. Blake.

(*Continued.*)

No. of Case.	Name and Occupation.	Age.	Date of Entrance.	No. of days sick before Entrance.	Whole duration of disease.	Result.	Locality of Disease.	Single or Double.	Vol. and page of Record.
176	H. H., Norwegian fresco-painter.	20	1869. Apr. 1.	4	20 days.	Well.	Lower half of left lung.	Single.	Vol. 37, p. 194.
177	M. K., Irish servant-w'm.	60	Apr. 2.	5	10 days.	Dead.	Upper half of left lung.	Single.	Vol. 37, p. 200.
178	J. W., Irish farmer.	19	Apr. 2.	5	15 days.	Dead.	Whole of both backs; right worse than left.	Double.	Vol. 38, p. 222.
179	H. T., Canadian porter.	32	Apr. 7.	7	28 days.	Well.	Lower half of right back.	Single.	Vol. 38, p. 240.
180	J. H., Irish laborer.	49	Apr. 21.	8	15 days.	Dead.	Both lungs throughout.	Double.	Vol. 40, p. 22.
181	H. F., American laborer.	37	Apr. 22.	14	28 days.	Well	Lower half of left lung.	Single.	Vol. 40, p. 24.
182	D. H., Irish servant-w'm.	30	Apr. 17.	21		Well.	Lower half of left back.	Single.	Vol. 40, p. 6.
183	F. O., Irish laborer.	45	Apr. 16.	49	75 days.	Rel'd.	Lower half of right back.	Single.	Vol. 39, p. 20.
184	M. M., Canadian seamstress.	22	Apr. 21.	10	25 days.	Well.	Whole of right back.	Single.	Vol. 39, p. 50.
185	T. S., Irish laborer.	30	Apr. 27.	7	43 days.	Well.	Whole of right lung; lower two-thirds of left	Double.	Vol. 40, p. 42.
186	P. D., Irish laborer.	35	May 4.	0	15 days.	N'rly well.	Lower half of both backs.	Double.	Vol. 40, p. 80.
187	D. C., Irish laborer.	23	May 6.	0	18 days.	Dead.	Lower half of each lung.	Double.	Vol. 40, p. 96.

(*Continued.*)

Complication.	Treatment.	Remarks.	By whom treated.
None.	Jacket poultice, milk, beef tea, sedative expectorants, tr. hyoscyamus, bromide of potassium.		H. I. Bowditch.
Bronchitis.	Sinapisms, jacket poultice, glycerine and paregoric, sherry wine oz. i. every hour; milk and broths.	Constant dyspnœa; pulse 84, irregular, at entrance.	H. I. Bowditch.
None.	Jacket poultice, wine of antimony gtt. vi. every hour, 20 drops during the last four days; fever mixture, Dover's powder at night; bromide of potassium grs. xx. every 2 hours; spirits of ammonia gtt. xx. every 2 hours during last day.	Very severe case; pulse 120; resp. 68; temp. 105.5° at entrance. During the last five days pulse ranged from 144 to 156.	J. G. Blake.
None.	Warmth to chest, quinine, Dover's powder, grs. xii. at night; iron, whiskey.		J. G. Blake.
None.	Jacket poultice, brandy oz. viii. daily; fever mixture, quinine, brandy oz. i. every hour during last two days.	P. 104; resp. 52; temp. 103° at entrance; highest rate of temp. 105½; only lower half of left lung affected at entrance; delirium during the last three days.	J. G. Blake.
None.	Jacket poultice, fever mixture, brandy oz. viii. daily; quinine; cough mixture, citrate of iron and quinine during the last week.	P. 92; resp. 32; temp. 104.5° at time of entrance; temp. fell to 99° on the following day, and remained at that standard.	J. G. Blake.
Phthisis.	Counter irritation to chest; cough mixture, cod-liver oil and whiskey.	Pt. continued in Hospital for treatment of phthisis.	J. G. Blake.
Phthisis supervened.	Cough mixture, anodynes, tr. cinchona comp., sinapisms to chest; cod-liver oil during last week.	Disease commenced immediately after a fall into the dock; but of a sub-acute character throughout.	H. I. Bowditch.
Laryngitis.	Cough mixture; Dover's powders; other treatment directed to the complication.	Pulse 58; resp. 19; temp 101° at entrance. Disease was secondary to its complication, both in its severity and time of appearance.	H. I. Bowditch.
None.	Fever mixture, milk, beef tea, cider, cough mixture, opiates; quinine during latter part of sickness.	Pulse 116; resp. 44; temp. 103° at entrance; highest pulse rate, 120; mild delirium two days after entrance.	J. G. Blake.
Rheumatism and phlebitis.	Fever mixture, jacket poultice; brandy oz. ss. every 3 hours; four days later increased to oz. vi. daily.	Patient entered with rheumatism of 8 days duration; pneumonia developed itself six days after entrance, and phlebitis affecting left leg six days later. Slight delirium on the supervening of pneumonia. Patient transferred to surgical side, for treatment of last complication.	J. G. Blake.
Rubeola.	Fever mixture, cough mixture, quinine, stimulants.	Disease supervened upon its complication, which in itself was of a very severe nature.	J. G. Blake.

(*Continued.*)

No. of Case.	Name and Occupation.	Age.	Date of Entrance.	No. of days sick before Entrance.	Whole duration of disease.	Result.	Locality of Disease.	Single or Double.	Vol. and page of Record.
188	R. F., Irish laborer.	21	1869. May 10.	3	24 days.	Well.	Lower 2-3 of right back; lower third of left.	Double.	Vol. 40, p. 106.
189	E. M., American tailoress.	25	May 15.	7	23 days.	Well.	Lower half of right lung.	Single.	Vol. 40, p. 130.
190	J. E., American laborer.	25	May 6.	5	24 days.	Well.	Upper half of right lung.	Single.	Vol. 39, p. 150.

(*Continued.*)

Complication.	Treatment.	Remarks.	By whom treated.
None.	Jacket poultice, fever mixture and cough syrup; wine whey, quinine during latter part of sickness.	Highest pulse rate, 100; highest temp., 105.8°; highest resp., 30.	J. G. Blake.
Tonsillitis.	Jacket poultice, beef tea, milk, sherry and the following powder:— Pulv. Ip. et opii., grs. viii. " Ipecac, " Scillæ, aa. gr. i. taken every hour.	Patient complained of severe pain in right chest nine days before any distinct crepitation was detected; at this time pulse became 132, temp. 105°, resp. 60.	J. G. Blake.
None.	Jacket poultice, Dover's powders, counter irritation and leeches to right chest, brandy, compound tincture of cinchona.	Pulse 84; resp. 39; temp. 103.5° at entrance.	H. I. Bowditch.

ARTICLE IV.

DISPLACEMENT OF THE UPPER JAW.

BY DAVID W. CHEEVER.

Case I. — The patient, a student, eighteen years old, entered the Hospital July 20, 1867, with the following history: —

About two and a half years ago he had profuse epistaxis, which continued twenty-four hours. During the six months next following this, he had only occasional slight attacks. At the end of that period he found that his right nostril was wholly obstructed, and he has never since been able to blow through it. He soon became aware of a growth behind that nostril which gradually but steadily increased, until within a few weeks of the time of entrance, when it grew rapidly. There was some discharge, but it was not offensive until quite recently.

At the time of admission to the Hospital, the soft palate was found to be depressed and pushed forward until it hung at a right angle with the hard palate, and both it and the tonsil were inflamed. At the right side of the fauces a small ulcerated patch

could be seen. By the finger, a tumor could be felt behind the soft palate, firm, full and lobulated, and extending farther up than the finger could be carried. Its lower lobes hung down into the throat. The whole of the upper part of the pharynx was occupied, except a small space on the left side. Nothing could be passed into the pharynx through the right nostril, but the left was clear. Hearing was imperfect in the right ear, and the respiration was mostly through the mouth. The microscopical examination of the debris of the tumor, removed by a digital examination, revealed only blood corpuscles, pus cells, and *fibrous* tissue. There was no evidence of malignancy.

The patient was able to take liquid or soft food only. The general health was good, with no hereditary predisposition. He was very desirous of an operation for the removal of the tumor.

There was no question that the tumor must be removed, or, before long, cause the death of the patient. The problem to be solved was, as to the best method of operating. Three modes offered themselves for consideration.

1st. By ligature, or the *écraseur*, through the nares. This was impracticable, because nothing could be passed through the right nostril opposite to which the bulk of the tumor lay; also, because it was not a pedunculated growth. Were it practicable, it could only cut off the growth, without eradicating it; and it would, probably, speedily recur.

2d. By section of the soft palate, of the hard pal-

ate, and removal through the mouth, with a subsequent operation for staphyloraphy. This mode, advocated and revived by Nélaton, but really as old as Hippocrates, was abandoned on account of the size and high attachments of the tumor, and the fear that room enough to manipulate could not be got through the section of the hard palate.

3d. By removing the superior maxilla, — a plain and easy way, but accompanied by deformity and serious mutilation. Here was a young man with a healthy jaw and perfect teeth, and the disease wholly behind it. Could a portion of the jaw be saved? or even the whole replaced? I decided to make a horizontal section of the jaw; depress it, saving all attachment of the soft parts possible; see if the tumor could thus be reached; and, if practicable, to replace the jaw, and try to save it.

July 23d. — *Operation.* The patient was etherized during the first part of the operation, and partial etherization was renewed at intervals; he was seated in a chair, with the head on a pillow.

An incision was made from just below the inner canthus of the right eye, downwards by the side of the nose, following the nasolabial fissure, to the corner of the mouth. The inner flap was dissected up until the symphysis was exposed; and the outer, until nearly the whole of the superior maxilla was free. With a narrow-bladed saw, about three inches long, the superior maxilla was now divided transversely, about half an inch below the floor of the orbit. The blade of the saw was plunged into the

zygomatic fossa, and the front and back walls of the antrum were sawn through horizontally, starting just below the articulation with the malar bone, and terminating in the anterior nares, at the lower end of the nasal bone. The ala of the nose having been lifted up, the right central incisor was next extracted. Strong bone forceps were now used to divide the alveolar process, through the socket of the right central incisor. The cut included the *alveolus only*. The hard and soft palate were not touched. The bone was now held by the palate process, palate bone and its co-ossification with the pterygoid processes. Seizing the alveolar process with strong tooth forceps, the whole section of the superior maxilla was bent down and displaced into the mouth. The antrum was found to be filled by one lobe of the tumor without attachment, while the body of the tumor was attached to the upper back part and right side of the pharynx and to the base of the sphenoid bone. The body was very firm, and the attachments were broad, covering a space two inches square. These, with considerable difficulty, were severed by scissors, introduced through the opening above the depressed section of the superior maxilla, and the base was cauterized repeatedly with strong nitric acid. The hemorrhage, which was not excessive, was thereby effectually checked. Four ligatures were applied to bleeding vessels in the course of the first incisions. With the forefinger of the right hand in the throat, and the left in the cavity above the section of the maxilla, they could be made to

meet freely, and explore thoroughly the pharynx, which was now found entirely clear of obstruction.

The superior maxillary bone was now hanging with its antrum exposed; and attached by the bent, or broken hard palate, the unbroken soft palate, and the broken osseous, and unbroken muscular and vascular attachments of the pterygoid process of the sphenoid bone. On these attachments we were to rely for the restoration of the bone. The maxilla was easily pushed up into its place, and held by a silver wire passed round the left central and right incisor teeth, and by the closing of the lower jaw. The flaps of skin were accurately approximated, and united in place by six interrupted sutures.

At the close of the operation, the pulse was 120, and of fair strength. Wine, iced milk, beef tea and opium were ordered, *pro re natâ*. 7, P. M. Pulse 132. Reaction good. Takes nourishment freely. No vomiting or pain. Urine free. ℞. Pulv. Doveri grs. x. 10, P. M. Sleeping quietly. Pulse 88. Respiration free.

July 24th, A. M. — Pulse 120, good. Patient in good spirits. Face drawn a trifle to left side. There is a little swelling of the face, and some offensive odor from the clotted blood. The parts syringed with ℞. Tr. myrrh., ℥ i.; aquae, ℥ iv. M. P. M. Pulse 130. No pain. Takes beef tea, milk, eggs, &c., freely. Sleeps considerably. Functions regular.

July 25th. — Pulse 96. Except some drowsiness, feels very well. Appetite good. Sutures removed, and good union found. Eye nearly closed by adja-

cent swelling. The nares and pharynx to be syringed twice a day.

July 26th. — Pulse 112. Looks brighter. Eye very much better. Union of flaps quite firm.

July 28th. — Improving. Discharges more moderate and less offensive. Upper jaw in good position, having fallen only a very little. Appetite good; bowels regular; sleeps well; no pain.

July 29th. — A small swelling of palate just behind incisor teeth lanced. Discharge of pure blood. General condition of patient as good as usual.

July 30th. — Ligatures all away. External wound entirely healed.

Aug. 1st. — Quite comfortable. Discharge diminishing. A small piece of gutta-percha was moulded between upper and lower jaws of right side, and a bandage around the head and chin to keep the bone up in place.

Aug. 3d. — Steadily improving. Jaw in good position.

Aug. 5th. — Discharge from right nostril about normal. Patient walks about Hospital grounds, without suffering any inconvenience or pain.

Aug. 12th. — Still doing admirably. *No purulent discharge.* Some pain on pressure where the jaw was sawed across. Plug between jaws continued. No appreciable motion of parts of bone.

Aug. 22d. — Progressing very favorably. Bandage and gutta-percha removed. Union of maxilla firm. Four weeks since operation.

Aug. 28th. — Discharged at his own request, well. Still wearing the wire about the teeth.

Sept. 2d. — Reported himself at the Hospital, in excellent condition. The wire removed. Union perfect; able to chew; now six weeks since the operation. Respiration clear. Examined with the rhinoscope by Dr. Langmaid, and the pharynx found healthy. A slight catarrh from the right nostril; nothing more.

Symptoms of recurrence of the growth were noticed after eleven months. The nostril became obstructed as before, and there was a feeling of fulness in the head. Otherwise than this the tumor had caused no inconvenience. There was no appearance of any disease in the pharynx, but Dr. Langmaid, with the rhinoscope, discovered the fibrous mass occupying its former position, and attached, like its predecessor, to the inferior aspect of the body of the sphenoid bone, and to the adjacent region of the pharynx.

Second Operation. — The steps in the operation for its removal, the operation being performed at once, were almost identical with those of the former one, and the lines of section were in the cicatrices of those of the year previous. Owing, however, to the thickening of the bone in the course of healing, it was necessary to remove a small portion at the inner angle, just below the orbital process, in order to expose the growth. The tumor, which was of the size of an English walnut, was removed by section of its pedicle with scissors, and the bone was thoroughly

DISPLACEMENT OF UPPER JAW.

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scraped. The hemorrhage was not sufficient to require ligatures. The bone and soft parts were apposed as in the former operation; a gutta-percha plug between the teeth and a bandage around the lower jaw, and over the head, aided in supporting the parts.

Convalescence, in this case, was more rapid, even, than in the primary operation. Without complication or drawback, recovery proceeded steadily; and after twenty-seven days he was discharged with the wounds perfectly healed, and the bone firmly in place. Eighteen months later he remained well, and sat for his photograph, from which the accompanying woodcut was taken.

Case II. — The patient was a farmer by occupation, and was 41 years old. He had suffered from the presence of a growth in the posterior nares during the previous eleven years. Its first appearance was attended with profuse epistaxis. Its rapid growth, and the inconvenience arising from its presence, induced him to submit to its removal by Dr. Peaslee, of New York, by section of the soft palate. An interval of health succeeded, in which he noticed nothing of consequence from the tumor; but thirteen months before presenting himself at the Hospital he felt symptoms of its recurrence. This recurrent growth had been attended with no pain, epistaxis, or other grave symptoms, although the patient was anæmic, and his mental condition was depressed and anxious.

Having applied again to Dr. Peaslee, he, having

seen the result of my first case, kindly sent the patient to me.

Examination discovered the following condition of things: Externally, the facial expression was unaltered. There was no protrusion about the region of the antrum. Both nostrils were perfectly occluded, one having been closed many months, while the other had remained open until within three weeks. The palate was pressed down by a tumor protruding from the roof of the mouth, of the size of a pullet's egg; its anterior edge extended to within half an inch of the alveolar border. It was elastic, painless, and without special tenderness. In the process of development it had absorbed the palatine process of the left superior maxilla, the edge of the bone defining its border. The pharynx was clear, below the soft palate, but completely filled above.

Deglutition, respiration and articulation were considerably impaired, and complaint was especially made of the difficulty in breathing, the sensation being of fulness and of a danger of suffocation.

Operation. — The size of the tumor and its situation in the median region, appeared to contra-indicate operation on one superior maxilla alone. Temporary depression of whole upper jaw was accordingly effected, as follows: The primary incision through the soft parts was on either side of the nose along the natural wrinkle from near the inner canthi, around the alæ and through the commissure of the myrtiform fossa of the lips. The flaps were freely reflected, so as to expose the bone beneath as far

upward as the malar prominences. With a narrow saw the body of the bone was divided from the tuberosity, forward, beneath the zygoma on each side into the middle meatus. The septum nasi and the vomer were divided with strong scissors. Nothing but the posterior attachments of the upper maxillæ now prevented their depression; and hinging on the pterygoid processes, the upper jaw was brought down so as to expose the tumor. Its attachments were found to be to the body of the sphenoid bone, and to the ethmoid. These attachments, except the first, were divided by the finger, and a section of the growth was made by means of scissors, as near the sphenoid bone as possible, the mass being too large to deliver altogether. With a gouge-chisel the remaining portion was scraped away and removed.

The whole growth was in size and shape like a large lemon. In its centre it contained a cavity with the remains of broken-down tissue. Subsequent microscopic examination determined the structure to be distinctly fibrous.

The depressed jaw was restored to its position and retained firmly by silver wire passed on each side through the malar bones. The soft parts were apposed by silk sutures; and the whole physiognomy perfectly reinstated.

The hemorrhage during the operation did not appear to be excessive, the blood escaping externally being only of moderate amount. The attendant shock was considerable, the pulse falling off at the last until it was hardly perceptible. Stimulants by

ænema rallied the patient in part, but throughout the day he remained in a drowsy, unconscious state after the effects of the ether had ceased. The condition of the patient was grave from the time of theopera - tion forward. In three hours a diarrhœa developed itself, the dejections being frequent, black, tarry and offensive, as of altered blood. Meanwhile there was no pain or nausea; the patient took nourishment, stimulants, and opiates well. The pulse ranged from 128 to 136, and was small, jerky, and feeble. The whole appearance was that of a patient sinking from exhaustion. The expression was listless; the skin dry and harsh; the tongue brown and parched. During the forty-eight hours after the operation, there was no essential change. The diarrhœa, abdominal pain, and general exhaustion continued. The wound in the face remained quiet, without sign of reaction, and there was no complaint of pain in that region.

On the third day, after continued efforts at stimulation and at control of the diarrhœa, the patient began to show more favorable symptoms. The dejections became less frequent and more natural in appearance. The mental condition was more sane. Slight suppuration commenced in the wound. The surface was warm and moist, and general signs of reaction became manifest.

On the following day, however, he relapsed into the former state. Jactitation, muscular tremor, and mental distress succeeded. The pulse was 124, and very small; the urine was retained and catheterization

was necessary. The face and conjunctivæ assumed a sallow hue. Steady sinking proceeded in spite of the stimulants, which from the beginning had been taken freely, and on the afternoon of the fifth day, one hundred and twenty hours after the operation, the patient died.

This patient was treated in a manner novel, so far as we know, the operation including both superior maxillary bones. Although he succumbed, we cannot but think that there is nothing in the operation itself, which should render it a fatal one. We know, at any rate, that much more serious mutilation of the jaws and face, in removing cancer, is almost always survived. The hemorrhage was moderate, and the shock should not be excessive.

Our patient was feeble and anæmic from suffering and abstinence. The pulse was poor from the beginning. He never rallied any higher than the state known as "prostration with excitement."

The removal of naso-pharyngeal polypi, otherwise unassailable, by a temporary displacement, instead of destruction of the superior maxilla, was performed here, for the first time, in the case (No. I.) described above; and it was *repeated* successfully on *the same patient*.

A similar operation was first described by Langenbeck, as follows: —

LANGENBECK'S OPERATION.

"My first osteo-plastic resection of the upper jaw was performed in 1859 (vide *Deutsche Klinik*, 1859, p. 471, B. Langenbeck, 'Beiträge zur osteoplastik'). My second operation is described in the *Deutsche Klinik*, 1861, p. 281, under the title 'Osteo-plastic resection of upper-jaw.'

"I have now performed this operation 13 times for tumors in the fossa pterygo-palatina and naso-pharyngeal cavity. Of these 13 cases there were 10 complete cures and 3 deaths. These latter were cases where the tumor had perforated the base of the cranium to a large extent, and where meningitis followed the operation.

"The operation has also been performed by Esmarch, in Kiel (*Deutsche Klinik*, 1863), for fibroid of the fossa pterygo-palatina, with a successful result; by Wagner, in Kœnigsberg, and by Timon, in Heidelberg, likewise with successful result. Nussbaum, in Munich, and Billroth, in Vienna, have performed the operation in order to cut the ramus secundus Trigemini for neuralgia.

. . . . . .

"The osteo-plastic resection of *both* upper jaw-bones has, up to the present time, never been performed in Germany nor in Europe."

. . . . . .

The following is a résumé of the report of his first operation: —

"Naso-pharyngeal-polypus; resection of processus nasalis and os nasi of right side; extirpation of polyp; replacement and reunion of resected bone. The external incision was made from the middle of the glabella to the right over the processus nasalis and downwards to the ala nasi. The edges of the wound were dissected up sufficiently freely to expose the nasal bone and the whole nasal process of the maxillary bone, the periosteum remaining untouched. Separation of cartilaginous portion of right half of nose from its bony connections. With a cutting bone forceps the os nasi was cut through close to the septum, upwards to the nasal process of frontal bone, and, by a second cut, the processus nasalis of the maxillary bone into the sinus maxillaris. This cut ended where the nasal process of the upper jaw forms the lower border of the orbit and touches the lachrymal bone. Both bones pried up together, so that they were thrown up on to the forehead and could be held there. Removal of polyp; replacement of bones; external incision carefully united with sutures, and right nostril plugged with charpie. The two bones were held together by the periosteum and mucous membrane, and a bridge of both membranes attached them to the frontal bone and the mucous membrane of the nasal cavity. The wound united by first intention, — no exfoliation of bone."

Langenbeck had previously excised these bones for similar tumors, and refers to these operations in

his report of this case. — (*Deutsche Klinik* — Resec. processus nasalis, 1854.) He has also found division of the velum palatinum with resection of pars horizontalis oss. palatin., sufficient.

His second article is referred to above under the title of osteo-plastic resection of the upper jaw.

"This operation," he says, "is necessary to remove those naso-pharyngeal polypi which are attached to the neighborhood of the tuba and the foramen spheno-palatinum, as also the sinus sphenoidalis. There are also tumors which spring from the fossa pterygo-palatina* and grow into the naso-pharyngeal cavity, and in the opposite direction into the fossa spheno-maxillaris."

The diagnosis in the present case was fibroid tumor of the left pterygo-palat. fossa. In making this diagnosis he remarks that naso-pharyngeal polypi may grow into the sinus frontalis, sphenoidalis and maxillaris and labyrinth of the ethmoid, and distend the walls of these cavities, but never into the fossa pterygo-palatina. In the present case the tumor, taking its rise in the latter fossa, makes its way through the foramen spheno-palatinum into the pharyx and nasal cavity, and in the other direction into the spheno-maxillary fossa, around the upper jaw, between the outer wall of this bone and the masseter muscle, towards the inner surface of the cheek. He has resected the zygomatic arch for a

*It would appear that the region to which Langenbeck gives the name of fossa pterygo-palatina, is described by Gray as the pterygo-maxillary fissure.

similar tumor which did not, however, extend into the nasal cavity.

"*Operation*, July 1, 1861. — The lower external incision began at the insertion of the ala nasi and ran along the lower border of the malar bone, describing an arc with the convexity downwards, and terminating at the middle of the zygoma. The second, upper incision began at the nasal process of the frontal bone, and following the lower border of the orbit, crossed the frontal process of the sup. maxillary bone, and joined the lower incision at an obtuse angle: without separating the skin from the subjacent soft parts, the lower incision was continued through the periosteum to the bone, and the masseter muscle separated from the lower border of the malar bone. The fascia buccalis being cut through disclosed a lobulated whitish tumor, which lay between the depressed outer surface of the upper jaw and the coronoid process of lower jaw, and extended backwards into the spheno-maxillary fossa. By separating the lower from the upper jaw, the tumor could be pushed away from the latter, and the index finger could be introduced between the two into the fossa pterygo-palatina. As the upper jaw was much compressed and the fossa spheno-maxillaris and pterygo-palatina much dilated, this was accomplished without difficulty, and the tip of the finger reached as far as the nasa cavity, passing through the dilated foramen spheno-palatinum. A small Langenbeck resecting saw was passed along the finger, and the upper jaw was sawn through from behind forwards by a horizontal cut, while a finger

introduced through the mouth into the posterior nares protected the septum from the point of the instrument.

"The upper incision through the skin was now deepened to the bone, and extended into the orbit and the soft parts in the angle between the processus frontalis and zygomaticus of the malar bone were cut through. The second cut of the saw, starting from the same point, extended from below upwards through the process, zygomaticus and frontalis of the malar bone, into the inferior orbital fissure, and from here through the processus orbitalis of the upper jaw to the os unguis.

"The resected upper jaw was thus left in connection with only the nasal bone and nasal process of the frontal bone, and the soft parts which covered this portion of bone were untouched. The hard palate and alveolar process were also preserved untouched. The bone was pried slowly upwards by an elevator introduced below the malar bone and moved on the sutures between it and the nasal and frontal bones as on a hinge joint.

"The tumor lay with its pediculated portion in the fossa pterygo-palatina, and exended sideways in both directions in lobulated masses the size of a hen's egg. One of these filled the naso-pharyngeal cavity, and the other the fossa spheno-maxillaris, and, slightly compressed by the zygoma, extended into the fossa-temporalis and towards the fiss. orbit. inf. The antrum was empty, but compressed to two-thirds its size. The septum narium was pressed to the right. The pediculated portion was separated

from the bone with difficulty. The other parts easily removed. The fossa pterygo-palat. much dilated. The bone was replaced, and, showing a slight tendency to ride forwards, was kept in place by gentle pressure. External wound united by iron sutures. On the 6th, the wound was healed in its greatest extent, but there was a large discharge of pus from the open part. On 16th, wound completely healed, and no movement perceptible in bone.

"A second similar operation on July 12th was performed for a fibroid tumor, taking its origin from the tuba and sinus sphenoidalis, with successful result."

From these two operations he draws the following conclusions: —

"I. The resection of the upper jaw with preservation of the hard palate and alveolar process is sufficient to make accessible tumors situated in the naso-pharyngeal cavity.

"II. The extirpation of the whole jaw is therefore for this purpose no longer allowable.

"III. It is possible to saw through the whole jaw in a horizontal direction, from the foramen sphenopalatinum.

"IV. The upper jaw, which has been excised with its surrounding soft parts, can be made to reunite.

M. Ollier, of Lyons, well known for his researches on the restoration and growth of bones, has also devised a method of exterminating Naso-pharyngeal polypi, without removing the jaw, as follows: —

OLLIER'S OPERATION.

A horseshoe-shaped incision is made through the skin down to the bone, commencing at a level with the right ala of the nose, running up to the junction of the nose and forehead, and thence descending on the other side of the level of the left ala. With a narrow-bladed saw, the bridge of the nose is sawn through in the same direction, from above downwards. The saw cuts through the nasal bone, and the ascending nasal processes of the superior maxillary bones. The septum is divided with scissors, and the nose turned down, hinging upon the alar cartilages, the columna and the skin. The superior meatus is then entered and dilated with the finger, and the polypus detached from the top of the pharynx, and removed. The nose is then replaced, and held by wire sutures. It is said to unite readily; and it leaves a symmetrical scar, without depression.

It will be obvious at once, on comparing the operations of Prof. Langenbeck, M. Ollier, and our own, that the first attacks the foreign growths from the side, the second from the front through the upper meatus of the nose, and the third from the front through the lower meatus. An interesting comparison thus presents itself: first, as to the relative room gained to operate in; second, as to the seat of the tumor; third, as to the arterial supply of the bony flap; and, lastly, as to the amount of external mutilation of the face.

Traité expérimental et Clinique de la régénération des os, par L. Ollier. Tome second, page 483.

Langenbeck's operation, it seems to us, gives the most room, but entails the most mutilation of the face, since we have two nearly transverse incisions, the upper one of which divides the whole levator group of muscles, and the masseter also. It seems more especially adapted to the class of tumors he calls "retro-maxillary," which grow from the spheno-maxillary fossa.

Ollier's operation gives very little mutilation; but although he has removed by it "probably the largest fibroid ever extracted from this region," yet we shall find, by measurement, that the operator's finger is just as far from the basilar process when he enters the upper meatus of the nose, as it is when he enters the mouth. Consequently M. Ollier has been led to modify his operation by making a second cut backwards from the lower meatus, to meet his downward cut, and thus lift out a wedge from the upper jaw.

The operations of our own, which have been detailed above, leave no mutilation, since there is but one incision through the skin, and this follows the natural wrinkle of the nose and mouth. This operation is, of course, adapted to naso-pharyngeal tumors only. It gives room enough, in ordinary cases, but in very large polypi, requires a double section, including both maxillæ.

Finally, as to the arterial supply. In Langenbeck's operation, the root of the flap is at the inner part of the orbit, and nasal process of the frontal bone. The main artery is the nasal branch of the ophthalmic, and some current probably comes through

terminal branches of the temporo-facial division of the temporal artery.

In Ollier's operation the root of the flap is at the junction of the alæ and septum of the nose with the upper lip. We have here branches from the superior coronary, and perhaps the angular branch of the facial, if the cut is not carried too far down.

In our own operation, on one maxilla, we have all the circulation in the mucous membrane of the hard and soft palate, and branches from the ascending pharyngeal and tonsillar arteries; perhaps, also, the posterior palatine arteries, if the jaw is not torn down too far. The root of the flap is the whole suture of the palate process of the maxillary and palate bones, the soft palate and the pterygo-maxillary junction — a supply ample to secure vitality and reunion, as shown in our repeated operations on the same patient, with successful result. In the section of both maxillæ we must depend on the posterior, palatine arteries, soft palate, and a portion of the buccal membrane. Unfortunately the early death of this patient left the question of reunion still unsettled.

Note. — Since the above was written we have satisfied ourselves by an operation for pharyngea-polypus, on the living subject, by Ollier's method, that the top of the pharynx can be easily reached by the finger, or instruments, through his simple downward cut of the bridge of the nose. The mobility and elasticity of the bones of the nose in life give much more room and play to the surgeon's finger, than appear possible on the dry skull.

ARTICLE V.

TREATMENT OF ACUTE RHEUMATISM.

BY JOHN G. BLAKE.

The following cases, three hundred in number, have been selected from over five hundred admitted to the City Hospital during the first five years of its existence, for Rheumatism in its various forms. It was desired that none but tolerably well-marked cases of acute articular rheumatism should be recorded, and a glance at the table will show that this plan was adhered to. The object of the writer was to ascertain, by a close scrutiny of results, whether certain remedies and methods of treatment confirmed claims made by their advocates, and to learn if any one possessed advantages over others in the cure of this most unsatisfactory disease. Having himself had charge of a fair proportion of the number, he will endeavor to supply whatever was omitted in the tables for want of space.

The treatment may be briefly divided into alkaline and non-alkaline, — the latter including, as will be seen, Iodide Potassium, Colchicum, Opium and Guiacum. Syrup of Lime should also be added here,

as it is not fairly entitled to be classed among alkalies. The alkaline is that recommended by Dr. Fuller, somewhat modified, and defended by him with such warmth whenever its efficacy is questioned. So much has lately been written on rheumatism with a view of determining the value of this method, that our observations will be directed to two points only, —the duration of the disease under this treatment as compared with the other, and the comparative exemption from heart complications in both.

I have recorded only such cases of cardiac affection as commenced after the patient might be said to be fairly under the influence of the treatment, and after the second day in the hospital. The house physician usually prescribes, if the case is well marked, as soon as the patient is admitted, so that no time may be lost by those who enter after the attending physician has made his morning visit.

Of the entire number (three hundred), there were one hundred and twenty-five under purely alkaline treatment. Preceding the administration of alkalies, the state of the bowels alway received attention, and a cathartic or enema was given if needed. The preparations used varied somewhat, according to the preference of the prescriber, but in most cases salts of Potash and Soda were chosen. The quantities given, as will be seen in the tables, varied from ʒss. to ʒij. every three or four hours during the first few days; increased if not found to render the urine alkaline, and diminished when this had been effected. In most cases two days were sufficient to produce

this result. I have found it very difficult to have larger doses retained; and, indeed, one of the chief objections to this method is the irritability of stomach and bowels to which the remedies give rise, when given in quantities of a drachm and upwards. I have frequently been obliged to diminish the amount recommended by Dr. Fuller, before getting the urine alkaline; and even when administered largely diluted in barley or rice water, many of our female patients could not retain doses sufficient to produce any result, consequently their use was discontinued.

Of the above one hundred and twenty-five cases treated by alkalies, during the existence of acute symptoms, and free from any discoverable cardiac complication until the third day, eighteen developed disease of the heart during their stay at the hospital. Thirteen of these affections were endocardial, accompanied by the murmurs observed in those cases. Five were pericardial, and two of these under my own care terminated fatally. As these were the only deaths either in my hospital or private practice, from rheumatism or its complications, and both having been under alkaline treatment from the very commencement, my faith in its protective influence over the heart was somewhat shaken.

The details were briefly these: A young woman, twenty-two years of age, strong, and previously perfectly healthy, was attacked by rheumatism in joints of upper extremities. I saw her on the third day, prescribed a cathartic of Colocynth and Calomel, and ʒss. each acet. and bicarb. Potass in water, every

three hours; Soda bicarb. zss. in a pint of rice water, for drink; warm fomentations to affected joints. No cardiac affection discoverable on auscultation, and no pain on inspiration in any part of chest. Five days after, she not having improved meantime, and other joints becoming painful and swollen, I prevailed on her to enter the hospital. Same treatment continued, with an occasional Dover's Powder to relieve pain. The day after being admitted, she complained of a feeling of soreness in region of heart, and a slight souffle was detected at apex. Strong iodine was applied to seat of pain. Next day a distinct friction sound was heard, and the suffering on inspiration had become severe. The case went on; effusion soon followed, attended with great dyspnœa; leeches, blisters, diuretics, tonics, stimulants, — the whole list of remedies were applied for the sufferer's relief, but without avail. She died after two weeks.

No. 2 was a man of thirty-five years, suffering for the first time from acute rheumatism of a very severe form, most of the large joints being affected. Admitted to the hospital sixth day of the disease; joints swollen, red, and painful; perspiration profuse and acid; urine high colored; no affection of heart. I remarked at the time to the house officer: "This is an admirable case for testing the value of alkaline treatment; let us carefully observe all conditions required by Dr. Fuller." The bowels were moved freely. Acet. and bicarb. Potassa, given in full doses; liquid nourishment of milk, gruel, and beef tea pre-

scribed, and anodynes of Hyoscyamus and bromide of Potassium at night. Urine became alkaline on second day; on fourth, patient began to develop symptoms of pericarditis, beginning with pain on inspiration, and feeling of distress in cardiac region. Friction sounds, effusion and its accompaniments of dyspnœa, delirium, etc., followed. Active treatment by myself and Dr. Bowditch failed to relieve the disease; local depletion, repeated counter irritation, with the usual efforts to sustain strength by means of liquid nourishment in abundance and stimulants in moderation, were tried. After a few days had elapsed, and no improvement manifesting itself, the administration of Quinine in doses of five grains four times a day, as recently recommended in pericarditis with delirium, was resorted to, but without any beneficial result. The patient died in seven days after the first manifestation of the disease. The other three cases fortunately recovered.

[I have often since regretted that no attempt to evacuate the fluid by tapping the pericardium was made in either of those cases, as has recently been successfully done in similar ones. I feel confident that the day is rapidly approaching when the use of the trocar and canula will become more frequent than at present in cases of distended pericardii, and that the amount of success will compare favorably with that obtained by Dr. Bowditch and others in the operation of paracentesis thoracis. I should certainly not hesitate again, all well-recognized methods failing, to give my patient the benefit of the attempt.

At the same time that the above case was under my care, a patient of Dr. Bowditch, also under the alkaline treatment, had a severe attack of pericarditis, from which he recovered.

I may be pardoned for detailing these two cases at such length, when it is remembered that special pains were taken in each to ensure a fair trial of the alkaline plan, and from the fact that both were very good specimens of severe acute rheumatism affecting the large joints, and coming under treatment at an early stage of the disease.

Every hospital physician knows that the number of such typical cases coming during his term of service is not very large. He may have many rheumatic affections, more or less severe, occurring in different constitutions,—nervous women and broken-down men,—in which he knows that alkalies will not be beneficial, and wisely refrains from their use. But when such a case as Dr. Fuller takes as a specimen presents itself (St. George's Hospital Reports, vol. 3, art. Treatment of Rheumatism), he feels called upon to test fully the efficacy of active remedies.

The cases of endocardial complication had murmurs of various degrees of intensity. Of these the murmurs disappeared in half the number before the patients were discharged.

The average stay of patients at the Hospital, under the alkaline treatment, was twenty-four days. From this, at least, one week should be deducted; many of them remaining from ten to fourteen, and *all* seven days after the disease may fairly be said to have been

cured. This gives an average of eighteen days as the duration of treatment, which, as will be seen further on, is much briefer than under other methods. It should here be said, that all were placed upon some tonic, either Quinine, Iron, Cod Liver Oil, or a vegetable bitter, after the discontinuance of alkalies. This, aside from its forming part of the alkaline plan, is absolutely necessary in the majority of those received into charitable institutions, such as ours. The condition of the sick poor is essentially the same in all large cities, and ours are average cases; but I have often thought that the habits of life among our English friends may have some effect in producing a more severely acute form of the disease, and one better adapted to alkaline treatment. We have fairly tried it, and still continue it in well-marked cases, — indeed, for such it is my favorite in both hospital and private practice; but we have failed to produce the results claimed by Dr. Fuller, either in procuring exemption from cardiac affections, or in curing the disease in eleven days.

It may be said that the quantity of alkalies and neutral salts given were insufficient; but I have observed that very few stomachs can be made to retain the large doses said to be sometimes administered, without irritating the stomach and bowels and prostrating the patient.

The writer feels that simple justice to Dr. Fuller's plan would exclude the majority of these from being called strictly alkaline treatment. Indeed, with the exception of the originator and a few others, the

published cases treated by alkalies have always seemed to have had the treatment modified, — very few physicians appearing to have given sufficiently large doses; the reason undoubtedly being the tendency of large doses to impair the appetite, produce intestinal irritation and griping pain, and the effect on the blood. The plan is a good one where the cases are carefully selected, and I believe better results can be obtained in severe acute rheumatism in robust subjects than by any other yet known; but the class is small, and not such as have come under treatment in our hospital in large numbers. During the past six months I have been very successful in private practice in the class of cases mentioned above, very few lasting more than a week, and no case showing any heart complication. Undoubtedly more carefully selected cases in the future, and stricter attention to the rules laid down by Dr. Fuller recently, will be attended with better results.

There were treated, under the non-alkaline plan, one hundred and seventy-five cases of well-marked acute rheumatism. The remedies were various, and such as have been usually prescribed for many years. A glance at the tables will show the nature of the treatment, and mention the principal remedies used. These were chiefly iodide potassium, colchicum, opium, syrup of lime, a few cases of Herbert Davis's blistering treatment, and a number in which the alkaline treatment failed to relieve. Among the number eighteen had some form of heart complication appearing on or after the third day in the hospital. These were chiefly

endocardial, with mitral murmurs. There were no deaths, except the two mentioned above, under alkaline treatment. In five of those treated under this method with cardiac complications, the murmur had disappeared at the time of discharge, — under the alkaline it had disappeared in seven.

The average stay of these cases in the hospital was thirty-five days. From this, seven to ten must be deducted, leaving the duration of treatment twenty-five days. This is scarcely a flattering result, and suggests a doubt as to the benefit arising from the administration of drugs. Certainly, in view of the recent statements of Drs. Gull and Sutton, and the success attending their treatment without drugs, we have not done so well for patients either in abbreviating their stay in the hospital, or saving them from more or less severe heart complications.

Glancing back over the list of remedies, each claimed in its day to be almost a specific, and each in turn falling into disuse, the practitioner finds his faith in the curative effect of medicine in this disease very much shaken. The alkaline treatment commends itself as rational, and one from which much might be expected, in view of the acid condition of the system; but results *almost* equally good have attended the use of bromide of Ammonium, by Dr. De Costa, where this condition was not affected.

For a time, during the warm months, many cases seemed to improve rapidly under the syrup of lime recommended by Dr. Buckingham; but it was soon discontinued, either on account of creating gastric

disturbance, or not materially modifying the disease. Dr. J. B. Upham gave the blister treatment a very fair trial in several, but the manifest inconvenience and even danger attending it in cases where many large joints are affected, precluded its general use. In those so treated, the pain was relieved for the time, but returned in the course of a few days with less severity, and continued about the average time. Its protective influence over the heart we could not fairly estimate in the small number of cases treated; none of them, however, showed any tendency to cardiac affection.

It should be mentioned, that in every case due attention was paid to local treatment, either by the application of opiated alkaline lotions, iodine, laudanum, hot sweet oil, sulphur on cotton batting with an outside covering of thin rubber cloth, aconite, chloroform, etc., etc., according to the experience of the prescriber.

We found that, when a single joint only was affected, encircling the limb in its neighborhood with blistering plaster, and producing decided vesication, will in most cases give prompt relief, if it does not permanently cure.

The writer hopes, that, before the results of the next five years' treatment of rheumatism in the Boston City Hospital are given to the medical public, something definite may have been learned of the value of drugs as remedies. At present, we are certainly undecided as to the relative value of different methods.

It is not creditable to the profession, that, while

the nature and treatment of many other diseases have been simplified, so much that is contradictory should be published about this.

Perhaps when more attention has been given to the natural history of the disease, and it is better understood, we shall be able to prescribe intelligently; and if not able to abbreviate its duration, at least spare the patient the taking of nauseous and unnecessary drugs.

No.	Age.	Sex.	Duration before admission.	Character of attack on admission.	Treatment.
1	24	F.	14 days.	Both ankles red and swollen, skin natural, tongue slightly coated, bowels regular, pulse 80.	Potass. Bicarb. ʒss, Aq. Gum Acaciæ ʒiv. quater die. On 10th day shoulder vesicated. 12th day, Potash omitted. 25th day, Tinct. Iodini to shoulder, and Potass. Acet. ʒj ter die.
2	39	F.	4 weeks.	Left thumb, right knee and back affected. Tongue coated. Bowels regular. Pulse 76.	Potass. Acet. gr. xx. quater die. Doubled on third day. Omitted on 20th day.
3	34	F.	13 days.	Pain and swelling of knees and ankles. Tongue coated. Appetite good. Pulse 96.	Potass. Acet. ℈iss ter die.
4	32	F.	20 days.	Pain in all the joints. Considerable sweating. Appetite good. Sleep poor.	Potass. Carb. gr. x. } ter die. Aquæ ʒiij } On 12th day replaced by Potass. Acet. gr.x. ter die.
5	45	F.	10 days.	Pain and swelling of right knee and ankle. Left wrist painful. Skin warm. Tongue with yellow coat at centre.	Potass. Acet. gr. x. ter die. 2d day increased to ʒss.
6	17	F.	6 days.	Pain and swelling of left knee. Pain in left elbow. Tongue moist with white coat. Pulse 116. No appetite. Much thirst. Bowels costive.	Potass. Acet. ℈j. quater die.
7	22	F.	7 days.	Pain in both elbows, shoulders and right thumb. Tongue coated white. Much thirst. Appetite poor. Catamenia regular. Pulse 76.	Potass. Acet. ℈ij. ter die; increased on 3d day to ʒj. Omitted on 8th day.
8	40	F.	21 days.	Both feet and ankles, also right hand and shoulder red, much swollen and very painful. Tongue with thin, brownish coat. Appetite fair. Urine scanty and high-colored, with abundant deposit of urates. Bowels constipated. Cta. regular.	Chamber's mixture ʒss ter die. Sulphur and batting round swollen joints.
9	22	F.	3 days.	Pain without redness or swelling of large joints of lower extremity. Tongue with creamy coat. Pulse 112. Much thirst. No appetite.	Potass. Acet. et Bicarb. aa ʒss every 4 hours. 9th day, Acetate omitted. 11th day, Potass. Iod. gr. v. ter die.
10	20	F.	5 days.	Pain in right shoulder, wrist and knee. Tongue with thin, white coat. Pulse 124. Appetite poor. Bowels regular.	Potass. Acet. et Bicarb. aa ʒss quater die. 23d day, omitted.
11	18	M.	20 days.	Pain and swelling of knees and ankles. Tongue with thin, white coat. Bowels regular. Pulse 56, irregular.	Potass. Acet. ʒss quarter die.
12	22	F.	3 days.	Redness, pain and swelling of knees, ankles and wrists. No appetite. Bowels regular. Tongue with thin, white coat. Pulse 120.	Potass. Acet. et Bicarb. ʒss ter die. Fourth day, Potass. Acet. gr. xx. substituted. Twentieth day, tonics substituted. Potass. resumed in ten days. Forty-second day, Potass. Iod.
13	21	F.	5 days.	Pain, redness, and swelling of larger joints. Tongue with thick, white coat. No appetite. Much thirst. Bowels costive. Pulse 108.	Second day, Potass. Bicarb. ℈ss every four hours. Seventh day omitted. Tenth day resumed.

State of heart throughout.	Progress.	Days in hospital.	Result.
Normal.	On 2d day all joints were affected. After that, steadily improved until 25th day, when attack was renewed after exposure.	60	Well.
Normal.	General and steady improvement after 2d day.	30	Well.
Normal.	Steadily improved.	28	Well.
Normal.	Gradual. Delayed by gastric disturbance.	50	Improved.
Normal.	Rapid.	25	Well.
Normal.	Rapid.	14	Well.
Normal.	Rapid.	16	Well.
Normal.	Rapid.	21	Well.
Normal.	Became chronic.	53	Well.
Normal.	Gradual.	37	Well.
Before admission complained of occasional palpitation. Second day systolic soufflé over base. Loudest between cartilages of 4th and 5th ribs, near sternum. Faint near apex.	Continual improvement.	10	Well.
On admission faint, systolic murmur at base. Twelfth day improved. Thirtieth day soufflé at end of 1st and during 2d sound. Complained of palpitation.	Very slow. Pain shifting from joint to joint.	50	Well.
Systolic and diastolic soufflé over base, on admission. Gradually grew less and disappeared.	Gradual.	37	Well.

(*Continued.*)

No.	Age.	Sex.	Duration before admission.	Character of attack on admission.	Treatment.
14	25	M.	4 days.	Pain and swelling of all the larger joints. Acid perspiration. Appetite poor. Tongue with moist, white coat. Pulse 102, intermittent.	Second day, Potass. Acet. et Bicarb. aa ʒss every four hours for two weeks.
15	46	M.	5 days.	Right knee and leg swollen and painful. Pulse 84. Tongue with light white coat. No appetite.	Potass. Carb. ʒss Potass. Acet. ℈j Aquæ ʒj } ter die. 11th day, Potass. Iod. gr. v. ter die.
16				Pain and swelling of knees, feet, elbows and hands. Appetite good. Bowels costive.	Potass. Bicarb. ʒss Potass. Acet. ℈j Aquæ ʒij } ter die.
17	24	M.	7 days.	Swelling and pain in both legs. Bowels regular. Urine scanty.	Potass. Acet. et Bicarb. aa ʒss ter die.
18	33	M.	25 days.	Pain in legs and right shoulder. Bowels regular. Considerable thirst. No appetite.	Potass. Acet. et Bicarb. aa ʒss ter die.
19	19	F.	7 days.	Pain in right leg and left knee and in abdomen. Bowels costive. Urine high colored. Headache. Thirst and anorexia.	Potass. Acet. Potass. Bicarb. aa ʒj. Aquæ ʒiij, ʒss ter die.
20	27	F.	5 days.	Both feet swollen and painful. Tongue moist, with creamy coat. Appetite and sleep poor. Pulse 96.	Potass. Bicarb. ʒiss. Aquæ ʒvi. ʒj ter die. 30th day, Potass. Iod. gr. v. ter die.
21	18	F.	3 days.	Pain and swelling of knees and hips. Bowels costive. No fever.	3d day, Potass. Acet. et Bicarb. aa ʒss ter die.
22	48	F.	5 days.	Knees, feet, shoulders and hands red, swollen and painful. Tongue with yellowish white coat. Much diaphoresis. Appetite poor. Bowels costive. Pulse 100.	Potass. Acet. et Bicarb. aa ʒss ter die. Cathartics pro re nata.
23	60	M.	14 days.	Feet, knees and hands swollen and painful. Tongue with thick, yellowish white coat. Appetite good. Bowels regular. Pulse 84.	Potass. Acet. et Bicarb. aa ʒss ter die.
24	30	F.	7 days.	Pain and swelling of joints of lower extremity. Tongue coated. Considerable thirst. Appetite good. Bowels costive. Pulse 100.	Potass. Acet. et Bicarb. aa ʒss ter die.
25	24	F.	10 days.	Pain and swelling of all the joints. Tongue lightly coated. Bowels regular. Pulse 76.	Potass. Acet. et Bicarb. aa ʒss ter die.
26	24	F.	2 days.	No. 25, readmitted after 2 days. Pain and swelling of hands and feet.	Potass. Acet. et Bicarb. aa ʒss ter die for 40 days.
27	22	F.	20 days.	Pain in feet, knees, shoulders and hands. Also, swelling of feet and wrists. Bowels regular. No appetite.	Potass. Acet. et Bicarb. aa ʒss ter die.
28	48	F.	6 weeks.	Knees, shoulders and wrists swollen and painful. No redness. Skin cool. Tongue with yellowish white coat. Appetite poor. Pulse 96.	Sodæ Bicarb. ℈jss. Potass. Acet. ℈jss. Aquæ ʒj. Every three hours.

(*Continued.*)

State of heart throughout.	Progress.	Days in Hospital.	Result.
On admission sounds were normal. Heart intermitted every 5th beat. Fourth day, soufflé after first sound at base. Ninth day, distinct friction sound. Tenth day, increased area of dulness. In two weeks all these had disappeared. Heart normal when discharged.	Gradual, with relapses.	43	Well.
Normal.	Continual improvement.	23	Well.
Normal.	Rapid.	14	Well.
Pain in cardiac region on admission. 3d day slight soufflé following 2d sound.	Rapid improvement.	14	Well.
Normal.	Rapid improvement.	10	Well.
Normal.	Gradual.	25	Nearly Well.
Normal.	Became chronic.	50	Well.
Normal.	Gradual.	25	Well.
Normal.	Began at once to improve.	17	Well.
Normal.	Rapid.	22	Well.
Normal.	Gradual improvement.	26	Nearly Well.
Normal.	Rapid improvement.	12	Well.
Normal.	Slow. Pain constantly shifted from joint to joint.	60	Well.
Troubled with palpitation. No murmur.	Rapid.	15	Well.
Normal.	Gradual.	25	Well.

(*Continued.*)

No.	Age.	Sex.	Duration before admission.	Character of attack on admission.	Treatment.
29	26	F.		Ankles swollen and painful. Appetite good. Bowels regular. Skin moist.	Potass. Acet. gr. x. ter die.
30	44	F.	3 weeks.	Pain and swelling of knees, feet and hands. Bowels regular. Appetite good. Much diaphoresis.	Potass. Acet. et Bicarb. aa ʒss ter die. Sixteenth day Potass. Iod. for one week. Quininæ Sulph. gr. xxiv. / Potass. Bicarb. ʒss / Tinct. Cardamon ʒss / Muc. Acaciæ ʒj / Aqua ʒxi. — ʒi. ss ter die.
31	35	M.	3 days.	Pain in left foot and hand. Bowels regular. Urine normal. Tongue clean and moist.	Sixth day, Potass. Acet. et Bicarb aa ʒss ter die.
32	17	M.	2 days.	Pain and swelling of nearly all the joints. Appetite poor. Bowels regular. Tongue with white coat. Resp. 26. Pulse 112.	Potass. Acet. et Bicarb. aa ʒss. Fourth day, dose doubled. Tonics substituted on the 20th day.
33	37	F.	3 weeks.	Pain, swelling and redness of left knee. Acid perspiration. Tongue clean and moist. Appetite poor. Bowels regular. Pulse 96.	Potass. Bicarb. ʒj every four hours.
34	26	F.	5 days.	Pain in back and hips. Skin warm. Tongue moist. Appetite poor. Considerable thirst. Catamenia regular, but scanty. Pulse 116.	Potass. Bicarb. ʒij / Potass. Acet. ʒij / Potass. Nit. ℈ii / Liq. Am. Acet. ʒviij — ʒj ter die. Suspended on 8th day.
35	20	M.	4 days.	Right foot red, swollen and painful. Skin warm and moist. Tongue moist, with creamy coat. Bowels costive.	Potass. Acet. et Bicarb. aa ʒss every four hours. At close of a week, once daily.
36	28	M.	6 days.	Right knee painful, slightly swollen and red. Pain in shoulder. Skin warm and moist. Tongue with thick white coat. Pulse 84.	Potass. Acet. et Bicarb. aa ʒss every four hours.
37	30	M.	10 days.	Pain, redness and swelling of knees and ankles. Skin hot and dry. Appetite poor. Bowels costive. Pulse 120.	Potassæ Acet. et Bicarb. aa ʒss every 3 hours. Sodæ Bicarb. locally.
38	16	M.	3 weeks.	Right wrist and hand red, swollen and painful. Countenance pale. Skin natural. Tongue clean. Bowels regular. Pulse 84, weak.	For ten days Vin. Colch. Rad. gtt. xx. ter die. Then Potass. Bicarb. ʒiij. Potass. Acet. ʒj. Potass. Nit. ℈ij. Liq. Am. Acet. ʒiv. Acidi Citrici ʒij. Divide into four parts. Dissolve one powder in Aqua ʒiv., and add ¼ of above mixture. Take every 4 hours. Omitted on 2d day.
39	24	M.	4 days.	Redness, swelling and pain in left knee, right hand and shoulder. Profuse sweating. Tongue with moist white coat. Appetite good. Pulse 100.	Potass. Acet. et Bicarb. aa ʒss every 4 hours. Omitted after 25 days.

(*Continued.*)

State of heart throughout.	Progress.	Days in Hospital.	Result.
Normal.	Had had rheumatism before. This attack not severe.	18	Well.
Normal.	Very obstinate, with frequent relapses and attacks of diarrhœa.	115	Well.
Normal.	Gradual.	40	Well.
Fourth day first sound intensified. Second sound occasionally reduplicated. Pain in cardiac region, but no murmur.	Constitutional symptoms severe until fourth day. After that gradual improvement.	45	Well.
Normal.	Rapid.	18	Well.
Normal.	Rapid.	13	Well.
Normal.	Rapid.	19	Well.
Normal.	Gradual.	40	Well.
Second day, friction sound. Increased area of dulness on 5th day. Tenth day no friction. Heart normal when discharged.	Gradual.	22	Well.
Normal.	Slow.	30	Well.
Third day soft systolic souffle at base.	Slow. Pain lingering in upper extremity.		

(*Continued.*)

No.	Age.	Sex.	Duration before admission.	Character of attack on admission.	Treatment.
40	30	M.	3 weeks.	Hands and wrist red, swollen and painful. Skin hot and moist. Tongue moist, with thick yellow coat. Pulse 96.	Potass. Acet. et Bicarb. aa ʒss every four hours. Omitted on third day on account of diarrhœa. Afterwards resumed.
41	18	F.	6 days.	Pain in most of the joints. Skin cool. Tongue slightly coated. Pulse 100.	Potass. Bicarb. ʒij Potass. Acet. ʒij Potass. Nit. ʒiij Liq. Am. Acet. ʒviij Acidi Citrici ℈iv. Divide in four powders. Dissolve one powder in ʒiv of water, and add one-fourth of above mixture, and take every four hours. Thirtieth day, tonics.
42	45	F.	16 days.	Pain, redness and swelling of feet, ankles and right elbow. Skin warm and moist. Tongue thickly coated. Pulse 100.	Potass. Acet. et Bicarb. ʒss ter die.
43	19	F.	7 days.	Pain in knee and right thumb. Respiration easy. Tongue slightly coated. Appetite good. Bowels regular. Pulse 112.	Potass. Acet. et Bicarb. ʒss every four hours. Twelfth day, tonics.
44	19	F.	7 days.	Pain, redness and swelling of most of the joints. Skin warm and dry. Tongue clean. Bowels regular. Pulse 80.	Potass. Acet. et Bicarb. aa ʒss every four hours.
45	18	F.	2 days.	Ri[illegible] [illegible]wollen and painful. Tongue with moist, white coat. No appetite. Bowels costive. Pulse 108.	Potass. Acet. et Bicarb. aa ʒj, aquæ ʒviii, ʒss every four hours. Omitted after four days.
46	16	F.	2 weeks.	Pain, redness and swelling of knees, ankles and hands. Skin cool and dry. Tongue with brownish coat. Appetite poor. Pulse 96.	Same as in No. 45. Omitted after twenty-four days.
47	24	M.	4 weeks.	Pain in knees and shoulder. Skin hot and dry. Tongue clean. Appetite good. Pulse 72.	Same as in No. 45. Put on tonics on tenth day. At end of week potash resumed.
48	23	M.	9 days.	Small joints of hand swollen, red and painful. Knees and ankles painful. Skin warm and moist. Tongue with white coat. Pulse 100.	Same as in No. 45. Date of omission not mentioned. Resumed on twenty-eighth day.
49	22	F.	9 days.	Ankles, feet and knees swollen. Skin warm and moist. Bowels regular. Tongue coated. Pulse 108.	Potass. Acet. et Bicarb. aa ʒj, Aq. ʒviij, ʒss four times a day. Twentieth day, diminished one half.
50	40	F.	4 days.	Pain, redness and swelling of joints of lower limbs. Skin warm. Tongue coated. Bowels costive. Pulse 104.	As in No. 49 for ten days. Then tonics.
51	28	M.	12 days.	Pain, with some swelling in hips, knees and ankles. Tongue coated. Appetite poor. Bowels costive. Pulse 84.	Same as in No. 49. At end of week reduced to three times a day.
52	25	F.	6 days.	Elbows, knees and ankles painful and slightly swollen. Tongue clean. Appetite poor. Bowels costive. Pulse 100.	Same as in No. 49.

(*Continued.*)

State of heart throughout.	Progress.	Days in Hospital.	Result.
Normal.	Slow.	35	Well.
Normal.	Slow.	40	Well.
Normal.	Rapid.	15	Well.
Normal on admission. Second day, slight systolic murmur over aortic valve and transmitted into neck. Less marked when discharged.	Gradual.	25	Well.
Normal.	Rapid.	24	Well.
Normal.	Rapid. No pain after tenth day.	27	Well.
Normal.	Rapid. Reported well on twenty-fourth day.	28	Well.
Normal.	Gradual, with one relapse.	30	Well.
Third day, distinct murmur after second sound. Fifth day murmur with both sounds. Seventh day, sounds more obscure. Slight friction murmur, only with diastole. Area of dulness increased. Bruit with both sounds when discharged.	Fifth day, active delirium, followed by coma. Respiration 40. Pulse 112. Seventh day improved. Pain in joints relieved.	90	Nearly well.
Second day, bruit with first sound. Fourteenth day, heart intermits every fourth beat. Bruit more distinct.	Slow, with relapses.	40	Well.
Complained of pain in cardiac region for first few days. Fifth day, sounds muffled. Sixth day, bruit with first sound at apex.	Quite rapid. Pain had disappeared in ten days.	24	Well.
Normal.	Gradual.	30	Well.
Normal.	Rapid.	14	Well.

(*Continued.*)

No.	Age.	Sex.	Duration before admission.	Character of attack on admission.	Treatment.
53	30	M.	2 weeks.	Joints of one upper and lower extremity swollen and painful. Tongue thickly coated. Bowels costive. Pulse 104.	Potass. Acet. et Bicarb. aa ʒss, once in 4 hours.
54	26	M.	4 days.	Pain in left knee, both ankles and shoulders. Left foot swollen. Tongue coated. Appetite poor. Bowels costive. Pulse 84.	Second day, Potass. Nit. ʒj, ter die.
55	23	F.	8 days.	Left elbow, wrist and knee painful. Right wrist swollen and somewhat painful. Appetite poor. Bowels regular. Pulse 68.	Potass. Nit. ʒj, ter die.
56	45	F.	13 days.	Nearly all joints painful, red and swollen. Skin natural. Tongue slightly coated. Pulse 104.	Third day, Potass. Acet. et Bicarb. aa ʒj every three hours. Omitted on the twenty-fifth day. Again resumed and tonics substituted on fortieth day.
57	30	F.	2 weeks.	Joints of lower limbs red, swollen and painful. Tongue with yellowish coat. Bowels regular. Pulse 88.	Potass. Bicarb et Acet. aa ʒj, aquæ ʒviij, ʒss every three hours.
58	26	M.	10 days.	Pain in all joints but left upper extremity. Skin warm and moist. Tongue coated. Appetite poor. Pulse 90.	Same as No. 57.
59	23	F.	3 weeks.	Both knees and ankles swollen and painful.	Same as in No. 57. Discontinued on tenth day.
60	40	M.	6 days.	Wrist swollen and painful. Appetite poor. Bowels regular. Pulse 68.	Same as in No. 57.
61	25	M.	2 weeks.	Pain in ankle and back. Tongue coated. Bowels regular. Pulse 84.	Same as in No. 57, ter die.
62	33	F.	2 weeks.	Knees and foot red, swollen and painful. Tongue coated. Appetite poor. Bowels costive. Pulse 112.	Potass. Acet. et Bicarb. aa ʒss, aquæ ʒss, every four hours.
63	23	F.	2 weeks.	Pain in feet, knees and back. Left foot swollen and red. Tongue coated. Appetite poor. Bowels regular. Pulse 120.	As in No. 62, four times a day.
64	27	M.	8 days.	Pain in elbow, knee and ankle. Latter swollen. Tongue coated. Bowels costive. Pulse 64.	Potass. Acet. et Bicarb. aa ʒss, aquæ ʒss, every four hours.
65	22	M.	4 days.	Pain without swelling of joints of right side. Appetite poor. Bowels regular. Pulse 100.	Potass. Acet. et Bicarb. aa ʒss, every four hours.
66	25	F.	8 days.	Pain in joints of left leg and shoulder. Both feet swollen and red. Tongue coated. No appetite. Bowels costive. Pulse 112.	Potass. Acet. et Bicarb. aa ʒss, six times a day.
67	28	M.	9 days.	Pain in feet, knees, wrists and elbows. Feet and hands swollen. Tongue coated. Appetite poor. Bowels regular. Pulse 84.	Potass. Acet. et Bicarb. aa ʒss, six times a day.
68	22	M.	1 day.	Discharged three days ago. Pains returned yesterday as before. See No. 65.	Potass. Acet. et Bicarb. aa ʒss, ter die.

(*Continued.*)

State of heart throughout.	Progress.	Days in Hospital.	Result.
Third day, slight prolongation of first sound.	Rapid.	12	Well.
Normal.	Rapid.	9	Well.
Normal on admission. Sixth day, slight bellows murmur at apex with first sound.	Rapid. No pain after thirteenth day.	20	Well.
Fourth day, slight murmur with first sound over apex.	Slow. Frequent relapses.	60	Nearly Well.
Normal.	Rapid.	12	Well.
Normal.	Rapid.	20	Well.
Normal.	Gradual.	30	Well.
Normal.	Gradual.	30	Well.
Normal.	Rapid. No pain after fifteenth day.	20	Well.
Normal.	Gradual.	30	Well.
Normal.	Rapid. No pain after sixth day.	9	Well.
Normal.	Rapid.	11	Well.
Normal.	Gradual.	22	Well.
Normal.	Rapid. No pain after seventh day.	14	Well.
Normal.	Rapid.	17	Well.
Normal.	Rapid.	10	Well.

(*Continued.*)

No.	Age.	Sex.	Duration before admission.	Character of attack on admission.	Treatment.
69	17	M.	2 weeks.	Feet, hands and wrists swollen and painful. Tongue coated. Urine high colored. Pulse 100.	Potass. Acet., Potass. Bicarb. aa ℥j, Aquæ ℥viii. ℥ss quater die. Tenth day, tonics. Twentieth day, Alkalies renewed.
70	18	M.	10 days.	Elbows and knees swollen and painful. Skin normal. Tongue moist. Pulse 100.	Treatment of No. 69, every four hours.
71	17	M.	5 days.	Pain, redness and swelling of knees, feet and ankles. Tongue coated. Pulse 112.	Treatment of No. 69, every four hours.
72	22	M.	1 week.	Ankles and wrists painful. Tongue with thick, yellow coat Appetite poor. Bowels regular. Pulse 92.	Pot. Acet. et Bicarb. ℥ss quater die.
73	20	F.	2 weeks.	Left hand and foot swollen and painful. Tongue with thick, yellow coat. Appetite poor. Bowels regular. Pulse 112.	Pot. Acet. et Bicarb. aa ℥ss quater die. Atropia Sulph. gr.1-50, subcutaneously over ankle 2d and 3d nights. End of four weeks, Potass. Iod.
74	39	M.	1 week.	Most of the joints swollen and red. Tongue natural. Appetite poor. Bowels costive. Pulse 80.	Potass. Acet. et Bicarb. aa ℥ss, quater die.
75	21	M.	10 days.	Pain, redness and swelling of all the joints. Tongue clean. Appetite good. Pulse 96.	Pot. Acet. ℥ss Pot. Bicarb. aa ℥j } every Aqua Oj } 3 hr's Omitted on 13th day.
76	48	F.	5 days.	Joints of left lower extremity painful and swollen. Tongue coated. Bowels costive. Pulse 92.	Potass. Acet. ℥j ter die. Tenth day, Potass Iod. ℥j, Potass. Bicarb. gr. xxx, Tinct. Cabumb. ℥j, aquæ ℥iij.; ℥ss every four hours.
77	45	M.	5 weeks.	Knees painful, and one of them swollen. Tongue with light brown coat. Appetite poor. Bowels regular. Pulse 88.	Potass. Acet. ℥j every 4 hours.
78	23	F.	10 days.	Right hand painful and swollen. Pain in feet and knees. Tongue coated. Appetite poor. Bowels regular. Pulse 92.	Treatment of No. 77.
79	18	F.	2 weeks.	Pain in shoulders, elbows and toes. Much sweating. Tongue thinly coated. Appetite good. Bowels regular. Pulse 112.	Pot. Acet. ℥j every 4 hours. Sixteenth day, but once daily. Potass. Iod. ℥v ter die.
80	22	M.	5 days.	Pain in knees, hip and shoulder. Appetite poor. Bowels regular. Tongue with creamy coat. Pulse 96.	Potass. Acet. ℥j quater die.
81	22	M.	1 week.	Pain in lower dorsal and lumbar regions. Skin natural. Appetite poor. Tongue clean. Bowels regular. Pulse 90.	Potass. Acet. ℥ss during the day. Omitted on the 20th day.
82	22	M.	4 weeks.	Knees painful and swollen. Tongue with thin, white coat. Appetite poor. Bowels costive. Pulse 80.	Potass. Acet. ℥j every 4 hours.

(*Continued.*)

State of heart throughout.	Progress.	Days in Hospital.	Result.
Normal.	Slow, with relapses.	45	Nearly well.
Normal.	Rapid.	19	Well.
On admission, action rapid. Apex beat in sixth intercostal space outside nipple.	Suffered a good deal from dyspnœa. Cyanotic hue of whole body. Died on 5th day.	5	Dead.
Normal.	Rapid.	16	Well.
Normal.	Slow.	60	Well.
Normal.	Rapid.	16	Well.
Normal.	Rapid. No pain after 13th day.	18	Well.
Normal.	Has had many attacks of rheumatism. This one rather slow.	30	Well.
Normal.	Rapid improvement.	11	Well.
Normal on admission. Tenth day, systolic murmur loudest over apex. Aortic 2d sound weakened. Pulmonic intensified. Souffle softer when discharged.	Gradual.	23	Well.
Normal.	Gradual.	30	Well.
Normal.	Rapid.	12	Well.
Normal.	Rapid.	20	Well.
Normal.	Rapid.	10	Well.

ACUTE RHEUMATISM,

(*Continued.*)

No.	Age.	Sex.	Duration before admission.	Character of attack on admission.	Treatment.
83	37	M.	2 weeks.	Pain and swelling of right knee. Pain also in left knee, hips and ankles. Tongue with white coat at centre. Appetite poor. Bowels regular. Pulse 80.	Potass. Acet. ʒj quater die. At close of week put on tonics.
84	29	M.	2 weeks.	Larger joiuts of lower extremity painful. Some redness and swelling of right knee and wrist. Tongue coated. Appetite poor. Bowels costive. Pulse 108.	Potass. Acet. ʒj quater die.
85	19	M.	5 days.	Joints of upper extremity red, painful and swollen. Those of lower painful only. Cheeks flushed. Skin hot. Tongue coated. Appetite fair. Pulse 96.	Potass. Acet. ʒss during the day. Omitted at end of four weeks.
86	28	M.	3 days.	Pain, redness and swelling of right knee. Tongue clean. Appetite good. Bowels costive. Pulse 93.	Linimentum Aconiti et Chloroformis to knee. Fourth day, Potass. Acet. ʒj quater die. Sixth day, reduced to ʒss.
87	22	M.	11 days.	Pain, redness and swelling of ankles and feet. Skin natural. Tongue clean. Appetite good. Pulse 68.	Potass. Acet. ʒss during the day.
88	26	M.	5 days.	Pain in foot, shoulder, elbow, ankle and knee. Skin hot. Tongue coated. Appetite poor. Pulse 96.	Potass. Acet. ʒss during the day. Tenth day, tonics.
89	28	M.	1 week.	Pain and redness of feet. Pain in shoulder. Tongue coated. Skin natural. Appetite poor. Bowels regular. Pulse 84.	Potass. Acet. ʒss during the day. Eighth day, tonics.
90	30	M.	1 week	Pain and swelling of most of the joints. Tongue coated. Bowels regular. Appetite poor. Pulse 92.	Potass. Acet. Potass. Bicarb. aa ʒss Liq. Am. Acet. Aquæ aa f ʒj every three hours. Seventh day, stimulants.
91	21	F.	1 week.	Pain and swelling of wrists, shoulders and knees. Tongue coated. Bowels regular. Appetite poor. Pulse 92.	Potass. Acet. et Bicarb. aa ʒss every three days. Omitted on eighth day.
92	27	F.	10 days.	Pain and swelling of wrist and knee. Pain in neck. Appetite poor. Bowels costive. Pulse 80.	Potass. Acet. ʒss during the day. Sixteenth day, tonics.
93	26	M.	9 days.	Pain in knees and shoulders. Tongue coated. Appetite poor. Bowels costive. Pulse 80.	Potass. Acet. ʒss during the day. Twelfth day, tonics.
94	25	M.	6 days.	Pain in hips. Tongue clean. Appetite poor. Bowels regular.	Potass. Acet. ʒj every three hours.
95	60	M.	2 weeks.	Pain, redness and swelling of one hand and both knees. Tongue coated. Bowels costive.	Potass. Acet. ʒj four times a day. Twelfth day, tonics.
96	22	F.	1 week.	Pain, heat and swelling of right foot and ankle. Tongue slightly coated. Appetite good. Bowels regular. Pulse 98.	Linimentum Aconiti et Chloroformis. Third day, Potass. Acet. ʒj every four hours. Twenty-fifth day, tonics.
97	30	M.	6 days.	Pain, redness and swelling of knees and ankles. Tongue slightly coated. Appetite poor. Pulse 108.	Potass. Acet. ʒj every four hours.

(*Continued.*)

State of heart throughout.	Progress.	Days in Hospital.	Result.
Normal.	Gradual, with relapses.	30	Well.
Normal on admission. Third day, systolic soufflé over base. Improving when discharged.	Had had two attacks of rheumatism. In this one pain was never severe.	25	Well.
Normal.	No pain after four weeks.	45	Well.
Normal.	Rapid. Pain confined to knee throughout.	9	Well.
Normal.	Gradual improvement.	23	Well.
Normal.	Gradually improved.	21	Well.
Normal.	Gradual.	22	Relieved.
Normal on admission. Fourth day, apex beat 1½ inches below and outside left nipple. Distinct friction murmur over whole of cardiac region. Twelfth day, systolic soufflé at apex. Friction sound still continues. Effusion, dulness on percussion	Continued to suffer much pain for ten days. Twelfth day, very weak and delirious. Died on fifteenth day.	15	Dead.
Normal.	Sixth day, much better. Continued to improve.	25	Well.
Normal.	Gradual improvement.	25	Well.
Normal.	Eighteenth day, after exposure had return of pain; otherwise did well.	30	Well.
Normal.	Pain confined for most part to hips and shoulders. Slow.	45	Well.
On admission a distinct mitral systolic murmur. Ninth day, as distinct as on admission.	Slow. Pain mostly confined to feet.	30	Nearly Well.
Normal.	Gradual.	30	Well.
Normal.	Gradually improved, although pain frequently returned.	30	Well.

(*Continued.*)

No.	Age.	Sex.	Duration before admission.	Character of attack on admission.	Treatment.
98	20	F.	5 days.	Left hand and wrist red, swollen and painful. Appetite good. Tongue coated. Bowels regular.	Potass. Acet. ℥ij Potass. Bicarb. ℥vj Potass. Nit. ℈iv Liq. Am. Acet. ℥viij } mix ee. ℥ij of above with Acidi Citrici ℈j every four hours.
99	48	F.	1 month.	Left shoulder, knee, and right elbow painful. Tongue coated. Appetite poor. Bowels costive.	Potass. Acet. gr. xv. ter die.
100	30	M.	2 weeks.	Pain, redness and swelling of knees, right elbow and wrist. Tongue clean. Appetite poor. Bowels costive. Pulse 108.	Potass. Acet. ℥j every four hours. Tenth day, omitted. Twelfth day, again resumed.
101	25	F.	6 days.	Swelling and pain in both ankles. Appetite poor. Tongue coated. Skin moist. Pulse 117.	Potass. Acet. ℥j every four hours.
102	19	M.	6 weeks.	Pain in joints of lower extremities. Tongue moist and slightly coated. Appetite fair. Bowels regular.	Potass. Acet. ℥j every four hours.
103	22	M.	1 week.	Pain, redness and swelling of most of the joints. Countenance flushed. Skin hot and very moist. Tongue coated. Appetite poor. Pulse 104, weak.	Potass. Bicarb. ℥j Aquæ ℥vj } ℥ij every two hours. Fourth day, omitted. Potass. et Sodæ Tartrati ℥ss pro re nata. Tinct. Iodine over heart.
104	30	F.	4 days.	Pain in shoulder, hip and knee. Skin dry and cool. Tongue moist and slightly coated. Appetite poor. Pulse 76.	Liq. Am. Acet. ℥ss Am. Carb. gr. x. } ter die.
105	26	F.	5 days.	Pain in knees, side, back and feet. Knees somewhat swollen. Cheeks flushed. Skin warm and moist. Tongue coated. Appetite poor. Pulse 116.	Potass. Bicarb. ℥vj Potass. Acet. ℥ij Potass. Nit. ℈ij Liq. Ammon. Acet. ℥viij ℥ij of above with Acidi Citrici ℈j every four hours.
106	31	F.	2 weeks.	Pain in ankles, knees, elbows and shoulders. Feet and left knee swollen. Tongue slightly coated. Appetite good. Bowels regular. Pulse 100.	Potass. Nit. ℥j every three hours. Fifteenth day, tonics.
107	30	F.	3 days.	Ankles much swollen and painful. Tenderness throughout lower extremities. Skin natural. Bowels regular. Pulse 124.	Treatment of No. 105. Sixth day, Pot. Acet. ℥ss ter die substituted. Continued ten days.
108	26	M.	2 weeks.	Both wrists red, painful and swollen. Tongue dry and slightly coated. Appetite good. Bowels regular. Pulse 93.	Potass. Acet. ℥j every four hours. Omitted on twelfth day.
109	31	M.	3 weeks.	Pain in knees and feet on motion. Tongue red at sides. Appetite good. Bowels regular. Pulse 82.	Potass. Acet. ℥j every four hours.
110	40	F.	3 weeks.	Pain in right side, increased by inspiration. Some pain between shoulders. Tongue clean. Bowels regular. Puls e90.	Wine and beef tea. Jacket poultice to chest. Fourth day, Potass. Acet. ℥ss every three hours. Twenty-fifth day, tonics.

(Continued.)

State of heart throughout.	Progress.	Days in Hospital.	Result.
Normal.	Rapid.	12	Well.
Normal.	Rapid. Pain had disappeared in ten days.	12	Well.
Normal.	Gradual, with one relapse.	30	Well.
Normal.	Pain had disappeared in a week. Remained for skin disease, which appeared after admission.	24	Well.
Normal.	Rapid.	15	Well.
On admission sounds were full and strong. No murmur at any time. Sixth day, area of dulness slightly increased. Apex little raised.	Acute symptoms continued until tenth day, then rapidly improved.	21	Well.
Normal.	Rapid.	15	Well.
Normal.	Rapid.	13	Well.
Normal.	Did very well for ten days; then pain returned and improvement was slow.	60	Well.
On admission distinct friction sound all over cardiac region. Fifth day, intense rasping, and accompanied at base with endocardial murmur, obscuring second sound. Thirteenth day, friction sound had almost disappeared.	While in hospital complained mostly of pain and distress in cardiac region.	27	Much relieved.
Normal.	Improved gradually.	22	Well.
Normal on admission. Seventh day, slight mitral systolic murmur. Eleventh day, murmur had disappeared. Sixteenth day, both sounds normal.	Slow. Pain shifting from joint to joint.	30	Well.
Normal on admission. Fifth day, slight increase in area of dulness. Slight bellows murmur over pulmonary artery. Twenty-sixth day, no murmur.	Pain soon extended to limbs, where it long lingered. Also, had pulmonary complication and iritis.	60	Well.

(Continued.)

No.	Age.	Sex.	Duration before admission.	Character of attack on admission.	Treatment.
111	40	F.	3 weeks.	Both ankles and feet red, swollen and painful. Right hand and shoulder also painful. Appetite good. Tongue with brownish coat. Bowels costive. Pulse 96.	Potass. Acet. ℥ij Potass. Bicarb. ℥vj Potass. Nit. ℈iv Liq. Ammon. Acet. ℥viij ℥ij with Acidi Citrici ℈j ter die. Omitted on 14th and resumed on 16th day.
112	26	M.	7 weeks.	Left knee, wrist and ankle very painful, and latter much swollen. Tongue clean. Appetite good. Bowels regular. Pulse 120.	Same as No. 111. Omitted on 10th day.
113	16	M.	5 weeks.	Pain in left ankle and knee. Some swelling of former. Tongue thinly coated. Appetite fair. Bowels costive. Pulse 90, weak.	Potass. Acet. ℥j every six hours.
114	25	F.	9 days.	Pain and swelling in larger joints. Urine high-colored. Tongue coated. Pulse 96.	Potass. Acet. ℥ij Aquæ Oj ℥j ter die.
115	33	M.	5 days.	Great pain in feet, knees and ankles. Tongue with yellowish white coat. Bowels regular. Pulse 88.	Sodæ Bicarb. and Potass. Acet. aa ℥j ter die.
116	48	M.	5 days.	Pain, swelling and slight redness of knees, hips, hands and arms.	Potass. Acet. et. Bicarb. aa ℥ss. At close of week diminished one-half.
117	21	F.	1 week.	Pain, redness and swelling of nearly all the joints. Tongue thickly coated. No appetite. Much thirst. Bowels costive.	Potass. Bicarb. ℥ss every 4 hours. Eighth day, tonics. Twenty-second day, Potass. resumed.
118	45	M.	4 days.	Pain, redness and swelling of left foot. Bowels costive.	Bicarb. Potass; Acetate of Potass. aa ℥ss every three hours.
119	20	M.	15 days.	Pain, redness and swelling in ankles and knees. Appetite poor. Bowels costive. Slight palpitation.	Potass. Bicarb.; Potass. Acet. aa ℥ss every three hours.
120	35	M.	47 days.	Pain, redness and swelling of nearly all the joints. Anorexia. Bowels regular.	Potass. Acet. et. Potass. Bicarb. ℥ss every three hours.
121	45	M.	1 day.	Pain, redness and swelling of foot and wrist. Urine high-colored. Bowels costive.	Potass. Acet. Potass. Nit. Potass Bicarb. Liq. Am. Acet. ℥j aa ℥ss every three hours.
122	50	F.	28 days.	Pain and swelling of various joints. Bowels costive.	Potass. Acet. Potass. Bicarb. Sodæ Bicarb. aa ℥ss every three hours.
123	52	F.	4 days.	Pain, and swelling of wrist and knee.	Potass. Acet. N Bicarb. ℥ss every three hours.
124	25	M.	18 days.	Pain in hips, knees and shoulders. Slight redness and swelling. Bowels regular. Urine high-colored.	Potass. Acet. ℥j ter die, followed by tonics.
125	23	M.	2 weeks.	Both wrists red, painful and swollen. Feet painful, though not swollen. Pain in small of back. Soreness in left side of chest. Tongue with thick, white coat. No appetite. Bowels loose.	Potass. Bicarb. ℥vi Potass. Acetate ℥ij Potass. Nitrate ℈iv Liq. Ammon. Acetate ℥viii ℥ii t. d. with citric acid ℈i.

(*Continued.*)

State of heart throughout.	Progress.	Days in Hospital.	Result.
Normal.	Pain in lower extremities soon abated. Shoulder continued longer painful.	21	Well.
Normal.	Improved rapidly. No pain after 10th day. Urine then alkaline.	15	Well.
Third day, area of dulness doubled. Extends outside nipple. No murmur.	Rapid.	11	Well.
Normal on admission. Seventeenth day, soufflé with 1st sound of heart. Twenty-sixth day, had disappeared.	Rather slow.	36	Well.
Normal.	Rapid.	14	Well.
Normal.	Obstinate pain continually returning.	60	Well.
On admission systolic and diastolic soufflé over the heart, loudest at apex. Eighth day, diastolic soufflé loudest at base. When discharged, sharp systolic soufflé loudest over apex.	Slow.	45	Well.
Normal.	No complications.	12	Well.
Mitral systolic murmur. Heart trouble dates back five years.	Rapid.	19	Well.
Normal.	No complication.	10	Well.
Normal.	No complication.	35	Well.
Normal.	No complication.	16	Well.
Normal.	No complication.	58	Well.
Normal.	Slight attack of diarrhœa.	35	Well.
Normal.	No redness or swelling 8 days after entrance.	16	Well.

(*Continued.*)

No.	Age.	Sex.	Duration before admission.	Character of attack on admission.	Treatment.
1	47	F.	3 weeks.	Pain in all the joints. Skin warm. Tongue clean. Appetite poor. Complains also of Cough.	Potass. Brom. gr. v. at night. Expectorant mixture. Eighth day, tonics.
2	50	F.	2 weeks.	Pain in all the joints except ankles. Tongue clean and moist. Skin cool. Bowels costive. Pulse 78.	Lin. Ammoniæ to joints. Seventh day, Tinct. Iodini to knee. Tenth day, tonics.
	18	F.	1 week.	Left foot and knee painful. Skin cool. Tongue natural. Appetite variable. Pulse 118.	Joints sprinkled with Sulphur. Pulv. Colch. gr. iii. } night and Pulv. Ip. Comp. gr. v. } morning. Eleventh day, Inf. Gentianæ ℥viii } ℥ss ter Tinct. Gent. Co. ℥j } die.
4	22	F.	6 weeks.	Pain in ankles and knees. Skin moist. Tongue clean. Appetite good. Bowels regular. Pulse 84.	Podophyllamiæ gr. xxiv. Aq. Menth. Pip. ℥vj } ℥ss ter Sacch. Albi. ℥ij } die. Fourteenth day, tonics.
5	19	F.	3 weeks.	Knee swollen and painful. Tongue coated. Skin warm. Pulse 96.	Tela Vesicator followed by poultice. Seventeenth day, Calcis Chloridi } every 3 Spt. Vini Gallici aa ℥ss } hours. Twenty-first day, Pot. Iod.
6	24	F.	8 weeks.	Pain in knees, ankles, wrists and shoulders. Bowels regular. Appetite poor.	Sulphur and cotton bathing to joints. Twelfth day, Vin. Colch. Rad. gtt. xii. Sixteenth day, Propylamiæ gtt. xxxij. } ℥ss Syrupi Simp. ℥v. ss } every Aq. Menth. Pip. ℥ij ss } two h'rs.
7	24	F.	1 week.	Stiffness in joints. No swelling. Tongue clean. Appetite poor. Bowels regular. Tongue with creamy coat. Pulse 96.	Potass. Acet. ℥j every four hours. Seventeenth day, Potass. Iod. gr. v. ter die.
8	26	M.	1 week.	Pain, redness and swelling of knee. Skin natural. Tongue with thick white coat. Appetite poor. Bowels loose. Pulse 80.	Potass. Bicarb. ℥vj Potass. Acet. ℥ij Potass. Nit. ℈iv Liq. Ammon. Acet. ℥viij One-fourth of above, with Acidi Citrici ℈j every four hours. Omitted next day. Fifteenth day, Vin. Colch. ℥ss Potass. Iod. ℥iss } gtt xx. ter Tinct. Opii ℥j } die. Twenty-third day substituted the following:— Spt. Aether Nit. ℥ss Potass. Nit. gr. v. } ℥j every three hours. Muc. Acaciæ Aquæ aa ℥vi In five days resumed treatment of fifteenth day.
9	25	M.	4 days.	Pain and swelling of right wrist. Tongue natural. Appetite good. Sleeps poorly. Pulse 64.	Potass. Acet. and Bicarb. aa ℥ss four times a day. Painful parts rubbed with Tinct. Opii. and wrapped in flannel. Sixteenth day, Potass. Iod. gr. v. ter die. Twenty-first day, Tinct. Guiaci. Am. ℥j ter die. Twenty-sixth day, Syrp. Phos. Trip. ℥j ter die.

(*Continued.*)

tate of heart throughout.	Progress.	Days in Hospital.	Result.
Normal.	Rapid. Complained mostly of cough.	15	Well.
Normal.	After seventh day pain in knee only.	38	Well.
Normal.	Slow.	40	Well.
Normal.	Slow.	46	Well.
Normal.	Before admission had suffered from rheumatism. While in hospital seemed to suffer from some other obscure disease.	23	Dead.
Normal.	For over a week vomited nearly everything taken. Attacks of vomiting at times afterwards. Did not complain of rheumatism.	30	Well.
Normal an admission. Eighth day, aortic systolic soufflé. Twenty-second day, had diminished.	Slow. Suffered from general stiffness but no acute pain.	40	Well.
Normal.	Very slow. Pain confined to knee for most part.	45	Well.
Normal.	Slow.	34	Well.

(*Continued.*)

No.	Age.	Sex.	Duration before admission.	Character of attack on admission.	reatment.
10	38	M.	4 days.	Pain, with slight swelling and redness of hips, knees and ankles. Tongue coated. Appetite poor. Bowels costive. Pulse 100.	Potass. Acet. ʒj ter die. Painful joints wrapped in flannel and sulphur. Fourteenth day, Tinct. Guiac. Ammon. ʒj ter die. Twenty-ninth day, tonics.
11	19	M.	1 week.	Pain in feet, knees and wrist. Tongue clean. Appetite poor. Bowels regular. Pulse 96.	Potass. Acet. ʒj ter die. Third day, Tinct. Digitalis gtt. vi. every 3 hours. Acetate omitted 8th day. Potass. Iod. ʒj Potass. Bicarb. ʒss Tinct. Calumb. ʒj Aquæ ʒiij } ʒss every four hours.
12	23	M.	3 weeks.	Pain in knee and elbow. Tongue slightly coated. Bowels costive. Pulse 96.	Local treatment only.
13	22	F.	6 weeks.	Knees and ankles somewhat swollen and painful. Skin natural. Tongue coated. Pulse 108.	Potass. Bicarb. Potass. Acet. aa ʒj Aquæ ʒviij } ʒss quater die. At end of week put on Pot. Iod. gr.vj. ʒ ter die.
14	26	M.	3 weeks.	Pain and swelling of feet and knees. Tongue clean. Appetite good. Pulse 72.	Potass. Iod. gr. v. ter die. Sixteenth day, Tinct. Guiac. Am. ʒj substituted. Twenty-second day, Iodide resumed. Fortieth day, Propylamiæ gtt. xxxvi. Liq. Potassæ ʒvi Sacch. Albi. ʒij Aq. Menth. Pip. ʒvj } ʒss ter die.
15	26	M.	4 months.	Knees swollen and painful. Appetite good. Bowels regular.	Potass. Iod. Seventh day, Vin. Colch. Rad. gtt. xv. quater die. Tenth day, Iodide omitted, but resumed on the 12th day. End of month quinine for a few days only.
16	56	M.	3 weeks.	Pain and swelling of joints of right hand. Appetite and sleep good. Bowels regular. Pulse 84.	Hot poppy fomentations to wrist. Sixth day, quinine.
17	51	M.	1 week.	Pain in knees. Tongue clean and moist. Appetite poor. Bowels regular. Pulse 84.	Potass. Iod. gr. v. quater die.
18	29	F.	3 weeks.	Pain, redness and swelling of calves of legs. Skin natural. Tongue clean. Pulse 96.	Hot poppy fomentations. Potass. Iod. gr. v. ter die.
19	10	F.	10 days.	Severe pain in back. Bowels regular. Appetite good.	Potass. Iod. gr. v.
20	21	F.	2 weeks.	Pain, redness and swelling of wrist and shoulder. Tongue moist, with thin, white coat. Pulse 108.	Potass. Iod. gr. v. ter die. Fifth day omitted.
21	15	F.	6 weeks.	Pain and swelling of elbows, shoulders, knees and hands. Appetite good. Bowels regular. Sleeps well. Pulse 96.	Potass. Iod. gr. iij. ter die. Eighth day, Vin. Colch. Rad. gtt. viii. substituted.
22	46	M.	5 weeks.	Pain in lower third of tibia, at times shooting up to knee. Skin warm and moist. Tongue dry. Some thirst. Appetite poor. Pulse 72.	Potass Iod. gr. vi Tinct. Gent. ʒij Syrp. Zing. ʒss } ter die.
23	27	M.	1 week.	Pain in hips and muscles of thighs. Appetite fair. Tongue moist with brownish coat at centre.	Pulv. Colch. Rad. gr. iv. Pulv. Ip. et Opii. gr. v. Sodæ et Pot. Tart. ʒss } four times a day.

(*Continued.*)

State of heart throughout.	Progress.	Days in Hospital.	Result.
Normal.	Began to improve on the 19th day. Then progressed rapidly.	45	Well.
Normal on admission. Third day, soufflé with first sound over base. Soufflé had disappeared when discharged. Second sound prolonged.	Rapid.	15	Well.
Normal.	Rapid.	10	Well.
Eighth day soft systolic soufflé with first sound.	Gradual. After pain had subsided, stiffness lingered for some time in ankles.	30	Nearly well.
Normal.	Very slow.	70	Relieved.
Normal.	Gradually improved. Pain did not extend beyond knees. No record after first month.	60	Well.
Normal.	Rapid improvement in rheumatism. Detained for ulcer of leg.	30	Well.
Normal.	Gradual improvement.	30	Well.
Normal.	Gradual improvement.	25	Well.
Normal.	Slowly improved.	30	Well.
Normal.	Quite rapid. No pain after a week.	12	Well.
Normal.	Slowly improved.	35	Well.
Normal.	Rapid.	8	Well.
Normal.	Rapid.	6	Well.

(*Continued.*)

No.	Age.	Sex.	Duration before admission.	Character of attack on admission.	Treatment.
24	30	M.	5 weeks.	Pain in back, shoulders and wrists. Skin natural. Tongue slightly coated. Appetite fair. Pulse 60.	As above. Omitted after three days. End of month, Potass. Iod. gr. vi / Gent. Inf. Comp. ʒj } ter die.
25	24	F.	3 weeks.	Knees and wrists red, painful and swollen. Tongue dry with brownish coat. No appetite. Bowels regular. Pulse 110.	Pulv. Colch. Rad. gr. iv. / Pulv. Ip. et Op. gr. v. / Sodæ et Potass. Tart. ʒj } ter die. Ninth day, Quin. Sulph. gr. i. ter die substituted.
26	27	F.	3 weeks.	Pain, redness and swelling of wrists and ankles. Skin natural. Appetite poor. Tongue clean. Pulse 84.	Pulv. Colch. Rad. gr. iv. / Pulv. Ip. et Op. gr. v. / Sodæ et Pot. Tart. ʒss } every four hours. Sodæ Bicarb. ʒss / Inf. Lini. Sem. Oj } as a drink. Latter omitted on seventh day. Gent. Inf. Co. ʒj.
27	30	M.	5 days.	Pain in most of the joints. No appetite. Great thirst. Skin normal. Urine scanty and high colored. Pulse 96, intermitting at every fourth beat.	Pulv. Colch. Rad. gr. iv. / Pulv. Ip. et Op. gr. v. / Sodæ et Pot. Tart. ʒss } every four hours. Sodæ Bicarb. ʒss / Inf. Lini. Oi } during day. Fourth day, first medicine reduced to every six hours. Eighth day, every four hours again.
28	21	M.	4 days.	Pain in arms, hands and feet. Skin warm and moist. Tongue dry with white coat. No appetite. Bowels costive.	Pnlv. Colch. Rad. gr. iv. / Pulv. Ip. et Op. gr. v. / Sodæ et Pot. Tart. ʒss } four times a day. Thirteenth day reduced one-half. Twentieth day Potass. Iod.
29	34	M.	2 weeks.	Pain, redness and swelling of ankles, knees, wrists and elbows. Skin hot and dry. Tongue dry, with thick, white coat.	Pulv. Colch. Rad. gr. iv. / Pulv. Op. et Ip. gr. v. / Sodæ et Pot. Tart. ʒss } every four hours. Ninth day, omitted. Potass. Acet. for three days. Then Vin. Colch. gtt. xv. fourteenth day. Increased to gtt. xx. eighteenth day. Alkalies continued for ten days. Also, quinine.
30	30	M.	1 month.	Joints of hand and shoulder painful, red and swollen. Skin natural. Tongue dry with brownish coat. Considerable thirst. Pulse 52.	Poppy fomentations, Cinchonæ Tinct. Co. ʒij twice a day.
31	23	F.	2 weeks.	Slight stiffness in right arm. Bowels regular. Urine normal. Pulse 92, small and feeble.	Potass. Iod. gr. v. ter die. Third day, Syrupi Calcis gtt. xx. substituted. After ten days put on tonics.
32	23	M.	9 days.	Pain in wrist, feet, back and shoulders. Redness and swelling of wrist and ankle. Tongue coated. Appetite poor. Bowels costive. Pulse 88.	Syrupi Calcis gtt. xx. every hour. Omitted on twelth day. Potass. Permang. gr. ss.ter die. Twenty-fifth day, Iodide substituted.
33	33	M.	2 weeks.	Pain in back, elbows, wrists and knees. No appetite. Bowels regular.	Potass. Iod. gr. v. ter die. Third day increased to every fourth hour. Fifth day, Syrupi Calcis gtt. xx. hourly in addition.

(*Continued.*)

State of heart throughout.	Progress.	Days in hospital.	Result.
Normal.	Slowly improved, but had occasional return of pain.	40	Well.
Normal.	Suffered scarcely any pain after two weeks.	25	Well.
Normal.	Inflammatory symptoms were worse before admission. Slowly improved while in hospital.	30	Well.
Complained of palpitation on admission. Apex beat slightly displaced outwards. No murmur at any time.	Much better on fifth day. Return of pain to shoulders on eighth day. After that continued to improve.	30	Well.
On admission systolic murmur more marked at base than apex.	Improved rapidly first few days. Had occasional return of pains during first month.	60	Well.
Normal.	Gradually improved.	28	Well.
Normal.	Began to improve at once, and progressed gradually. No record after first month.	60	Well.
On admission cardiac dulness extended upwards to 2d rib, and outward two inches to left of median line. Souffle, with first sound most distinct at apex.	Had suffered worst of her disease before admission. Continued to improve while in hospital.	18	Well.
On admission souffle with first sound at apex. Twenty-fifth day, area of dulness extended from right edge of sternum to a line extending through left nipple. Soft souffle obscuring end of first and second sounds over base. Same when discharged.	Slow.	58	Well.
Normal.	Rapid. No pain after tenth day.	14	Well.

(*Continued.*)

No.	Age.	Sex.	Duration before admission.	Character of attack on admission.	Treatmen
34	30	F.	1 week.	Knees and ankles red, swollen and painful. Appetite poor. Urine high colored. Pulse 94.	Fourth day, Syrupi Calcis gtt. xx. hourly.
35	19	M.	1 month.	Swelling and pain in wrist. Headache. Anorexia. Bowels costive.	Syrupi Calcis gtt. xx. hourly for three days. Then Potass. Permang. gr.ss ter die for three days, then Tonics.
36	30	F.	12 days.	Pain and some swelling in shoulder, knee and foot. Skin hot and moist. Tongue thickly coated. Pulse 108.	Ipecac. Pul. Comp. pro re nata. Tinct. Iodini. End of month, Tonics and Tinct. Guiac. Am. ℥i ter die.
37	58	M.	1 month.	Pain and swelling of knee. Pain also in ankles, feet and wrists. Tongue coated. Bowels costive. No appetite. Pulse 72.	Vin. Colch. Rad. gtt. xii every four hours. Quin. gr. ij Pot. Bicarb. gr. xxx Muc. Acaciæ ℥ss } ℥ss every four hours. Twentieth day, Potass. Iod. gr. v. ter die.
38	47	F.	6 days.	Swelling and pain in most of the joints. Countenance flushed. Thirst urgent. Appetite poor. Bowels regular.	Pulv. Colch. Rad. gr. iv. " Ip. et Opi. gr. v. Sod. et Pot. Tart. ℥ss } Quater die. Sixth day, reduced to three times a day.
39	24	F.	2	Pain in shoulder, elbow, knees and ankles. Skin warm and moist. Appetite good. Thirst urgent. Bowels regular. Pulse 80.	Mag. Sulph. ℥ss Sod. Bicarb. ℥ss Vin. Colch. Rad. ℥ss Aquæ ℥iv. } ℥ij every six hours. Tenth day, Syrup Calcis gtt. xx. every two hours.
40	30	F.	3 weeks.	Pain and swelling of joints. Appetite fair. Bowels costive. Tongue moist and slightly coated. Pulse 60.	Potass. Iod. gr. v. ter die.
41	38	F.	1 month.	Pain and stiffness in back. (Was in hospital for acute rheumatism, and discharged five weeks ago.) Bowels regular.	Potass. Iod. gr. v. ter die. Cotton batting and sulphur to back.
42	15	F.	3 weeks.	Pain in back, feet and knees. Skin cool and moist. Tongue clean. Appetite poor. Thirst urgent.	Tinct. Ferri. Mur. gtt. viij three times a day. Tinct. Iodini locally.
43	22	M.	3 weeks.	Hands and wrists swollen, red and painful. Skin warm and moist. Tongue slightly coated. Pulse 80.	Potass. Iod. gr. v. ter die.
44	14	F.	2 weeks.	Pain, redness and swelling of knees and feet. Tongue moist and slightly coated. Appetite good. Bowels regular. Pulse 80.	Pot. Iod. gr. iij ter die. Omitted at end of month. Thirty-fifth day, Tr. Guiac. Am. gtt. xv. ter die.
45	19	F.	4 days.	Pain in arms and feet. Tongue clean. Bowels costive. Catamenia regular. Pulse 96.	Potass. Iod. gr. v. ter die. Fifth day, Syrupi Calcis gtt. xx. ter die, substituted. On sixth day of use, doubled. Three weeks after admission, Iodide resumed.
46	19	F.	1 week.	Pain and slight swelling of feet and hands. Skin moist. Tongue with brownish coat. Bowels costive. Pulse 88.	Potass. Iod. gr. v. ter die.
47	35	M.	4 days.	Pain and redness of foot. Tongue slightly coated. Appetite poor.	Potass. Iod. gr. v. ter die.
48	24	F.	1 week.	Pain in right ankle, knee and shoulder. Tongue with brownish coat. Pulse 88.	Pot. Iod. gr. v. ter die.

(*Continued.*)

State of heart throughout.	Progress.	Days in Hospital.	Result.
Fifth day, systolic souffle at apex.	Rapid.	12	Well.
Normal.	While in hospital had an attack of bronchitis, which had not entirely disappeared when discharged.	40	Well.
Normal on admission. Fourteenth day, friction sound first heard. Seventh day, area of dulness increased.	Very slow. In early part complicated with bronchitis.	130	Well.
Normal.	Quite rapid. Well on twenty-second day.	28	Well.
Normal.	Rapid.	14	Well.
Normal.	Gradual.	35	Well.
Normal.	Subacute throughout.	16	Well.
Normal.	Symptoms not severe at any time.	22	Well.
On admission, aortic regurgitant murmur. Complained of palpitation.	A mild attack.	30	Well.
Normal.	Rapid.	17	Well.
Normal.	Pain settled in right knee. Very slow.	70	Well.
Normal.	Slow.	40	Well.
On admission, souffle with systole loudest over apex.	No pain after two weeks.	30	Well.
Normal.	A mild attack.	16	Well.
Normal.	Very rapid.	6	Well.

(Continued.)

No.	Age.	Sex.	Duration before admission.	Character of attack on admission.	Treatment.
49	24	M.	3 weeks.	Pain, redness and swelling of most of the joints. Tongue clean and moist. Appetite poor. Bowels costive. Pulse 76.	Ipecac Pulv. Comp. gr. v. ter die. Seventh day, Potass. Iod. gr.v / Vin. Colch. Rad. gtt.x } ter die.
50	49	M.	6 weeks.	Pain and redness of knees, hips, ankles and shoulders. Expression natural. Skin cool and moist. Appetite good. Bowels regular. Pulse 80.	Potass. Iod. gr.v / Vin. Colch. Rad. ℥x } ter die. Colch. increased to ℥xv on ninth day. Twenty-fifth day, tonics substituted.
51	31	F.	10 weeks.	Pain in both hips. Appetite poor. Bowels costive. Pulse 92, irregular.	Potass. Iod. gr.v / Vin. Colch. Rad. ℥x } ter die. Tinct. Iodini over cardiac region.
52	43	F.	4 weeks.	Severe pain in back and limbs. Right and left hand swollen and painful. Tongue with white coat. Bowels costive. Pulse 104.	Potass. Nit. ʒss / Spt. Aether Nit. ʒij / Liq. Amm. Acet. / Aq. Camph. aa ʒij } ʒj every 2 hours. Tinct. Opii. / Sod. Bicarb. aa ʒj / Aquæ Oss } applied to joints.
53	44	M.	1 month.	Knee and shoulder painful and swollen. Skin warm and moist. Tongue slightly coated. Appetite fair. Pulse 84.	Potass. Iod. gr.v ter die. / Oleum Morrhuæ / Spt. Frumenti aa ʒij / Spt. Lavand. Co. ʒiv } ʒij. ter die. Fortieth day Potass. Acet. / Potass. Bicarb. aa ʒss / Aquæ ʒss } every 4 h'rs for 10 days.
54	19	M.	10 days.	Left ankle red, swollen and painful. Skin moist. Tongue moist and slightly coated. Appetite good. Pulse 92. Has symptoms of specific disease.	Potass. Iod. ʒij ss / Aquæ ʒiv } ʒj ter die.
55	30	M.	4 months.	Pain in joints, particularly at night. Skin warm and slightly moist. Pulse 92. Appetite poor. Bowels costive.	Third day, Syrupi Calcis gtt.xx every 2 hours for 5 days. Potass. Acet. et. Potass. Bicarb. aa ℈j for 2 weeks, beginning with the 5th day.
56	25	M.	9 days.	Pain in joints of arm and in one ankle. Skin warm and moist. Tongue clean. Pulse 76.	Syrupi Calcis gtt. xx every 2 hours. After 3d day every 4 hours.
57	16	M.	5 days.	Pain, redness and swelling of right knee, ankles and feet. Pulse 84. Tongue clean. Skin warm and moist. Urine normal.	Syrupi Calcis gtt.xx every four hours.
58	25	F.	6 days.	Pain, redness and swelling of several joints. Skin warm and moist. Tongue with yellowish, pasty coat. Appetite poor. Pulse 128, weak.	Syrupi Calcis gtt.xx every two hours.
59	16	M.	1 day.	Ankles red, painful and swollen. Tongue clean. Appetite good. Bowels regular.	Syrupi Calcis gtt.xx every two hours.
60	19	F.	6 weeks.	Pain, swelling and redness of several joints. Skin warm, with acid perspiration. Tongue coated. Appetite poor. Bowels costive.	Syrupi Calcis gtt.xx every two hours. After 8th day, every four hours. Six days later, put on tonics.
61	15	F.	6 days.	Pain, redness and swelling of knees, ankles and elbows. Skin natural. Tongue clean. Pulse 80. No appetite. Bowels costive.	Syrupi Calcis gtt.xv every 2 hours.

(*Continued.*)

State of heart throughout.	Progress.	Days in Hospital.	Result.
Normal.	Complained a good deal of headache and pain in epigastrium.	30	Nearly well.
Normal.	Subacute, but slow.	40	Well.
Pain in cardiac region on admission. No murmur throughout.	Severity of attack had passed before admission. No pain after 12th day.	30	Well.
Normal.	Rapid.	17	Well.
Normal.	Rapid.	17	Well.
Normal.	Rapid.	5	Well.
Normal on admission. Third day, harsh grating with systole most distinct at apex. Heart normal when discharged.	Gradual.	35	Much relieved.
Normal.	Rapid.	13	Well.
Normal.	Very rapid.	7	Well.
Rapid on admission, but no murmur. Ninth day, loud systolic soufflé, most distinct at apex. No murmur along aorta. Much diminished, but still perceptible, when discharged.	Rapid.	13	Well.
Normal.	Rapid.	18	Well.
Normal.	Rather slow. Pains inclined to return in several joints.		
Normal.	Rapid.	20	Well.

(*Continued.*)

No.	Age.	Sex.	Duration before admission.	Character of attack on admission.	Treatment.
62	. .	F.	. . . .	Various joints swollen, red and painful. Skin hot and moist, with acid perspiration. Tongue with white coat. Pulse and respiration regular. No appetite. Bowels costive.	Syrupi Calcis gtt.xx. every two hours.
63	52	M.	1 month.	Calves of both legs swollen and painful. Face flushed. Skin dry. Tongue moist and slightly coated. Appetite poor. Bowels regular. Pulse 72.	Tinct. Guiac. Am. ℥j ter die.
64	32	M.	10 days.	Pain in foot and popliteal region. Tongue moist and slightly coated Appetite poor. Bowels regular. Pulse 96.	Potass. Iod. ℥ij, Aquæ ℥iv } ℥j ter die.
65	60	M.	7 weeks.	Pain in feet, ankle and hand. Skin natural. Tongue clean. Appetite fair. Bowels regular. Pulse 64.	Inf. Calumbæ ℥ij, Tinct. Calumbæ ℥ij } ter die.
66	35	M.	5 weeks.	Pain in hands and feet. Tongue clean. Appetite fair. Pulse 88.	Potass. Iod. gr. v. Vin. Colch. gtt.xx. } ter die. Hot douche locally.
67	34	M.	13 days.	Pain in lumbar region shooting up towards shoulder. Skin warm and moist. Tongue moist, with thin white coat. Appetite feeble. Bowels costive. Pulse 80.	Syrp. Phos. Trip. ℥j ter die.
68	35	M.	8 days.	Pain in back. Aspect good. Skin warm and dry. Tongue moist and slightly coated. Bowels costive. Pulse 72.	Hot fomentations. Dover's powders pro re nata.
69	18	M.	4 weeks.	Pain, redness and swelling of ankles, knees and wrists. Skin cool and moist. Tongue coated. Bowels regular. Pulse 80.	Tinct. Guiac. Ammon. ℥j ter die. Omitted on twenty-fifth day.
70	49	F.	4 weeks.	Slight pain and swelling of knees and ankles. Tongue clean. Appetite fair. Bowels costive. Pulse 88.	Tinct. Saponis et Opii to joints. Quin. Sulph. gr. j. ter die.
71	22	F.	6 weeks.	Pain in leg, arm and chest. Tongue natural. Appetite fair. Bowels costive. Pulse 84.	Potass. Iod. gr. v. ter die.
72	24	F.	19 days.	Pain in knees, back and shoulder. Bowels regular. Appetite fair. Tongue clean. Pulse 56.	Tinct. Aconiti Rad. Chloroformis aa ℥j, Alcohol ℥ij } applied to painful parts.
73	50	M.	4 weeks.	Pain in ankles and calves of legs. Respiration easy. Tongue clean and moist. Pulse 50.	Pulv. Colch. Sem. gr. viij. Pulv. Ip. et Op. gr. x. } hourly. Twelfth day, tonics.
74	27	F.	1 week.	Tenderness on pressure in feet. Tongue red. Bowels costive. Respiration easy. Pulse 100.	Pulv. Colch. Sem. gr. ij. Pulv. Ip. et Op. gr. viij. } hourly. Tinct. Iodini to soles of feet.
75	31	F.	2 weeks.	Pain in legs, which are swollen and red about the ankles. Tongue normal. Appetite poor. Bowels regular. Pulse 64.	Atropine Sulph. gr. 1-60 subcutaneously.
76	50	F.	6 weeks.	Headache and pain in shoulder. Tongue with thick yellow coat. Appetite poor. Bowels costive. Pulse 84.	Laxatives pro re nata.
77	15	F.	4 days.	Right hand and foot painful and little swollen. Tongue natural. Appetite poor. Bowels costive. Pulse 56.	Atropine Sulph. gr. 1-60 subcutaneously at wrist. Repeated on fourth day.

(*Continued.*)

State of heart throughout.	Progress.	Days in Hospital.	Result.
Normal.	Rapid.	20	Well.
Normal.	Rapid.	13	Well.
Normal.	Rapid.	3	Improved.
Normal.	Severity of attack had passed before admission. In Hospital improved rapidly.		
Normal.	Gradual.	30	Well.
On admission, distinct souffle following systole. Not perceptible when discharged.	Gradual.	20	Well.
Normal.	Soon relieved of pain.	7	Relieved.
Normal on admission. Sixteenth day, bruit heard with first sound at apex, with second sound at base. Same when discharged.	Began to improve at once. No pain after 25th day.	40	Well.
Normal.	Rapid.	16	Well.
Normal.	Rapid.	10	Well.
Normal.	Began to improve.	4	Relieved.
Normal.	Soon relieved of pain but stiffness remained in joints.	40	Well.
Normal.	Steadily improved.	12	Nearly well.
Normal.	Pain nearly relieved by atropia.	7	Nearly well.
Normal.	Severity of attack had passed before admission. Complained chiefly of headache.	12	Relieved.
Normal.	Rapid.	15	Well.

(*Continued.*)

No.	Age.	Sex.	Duration before admission.	Character of attack on admission.	Treatment.
78	20	M.	2 months	Severe pain in feet. Bowels regular. Appetite good. Tongue clean and moist. Pulse 88.	Iodini ℥ i } Applied to Æther. Sulp. ℥ j } feet.
79	22	M.	3 days.	Pain on motions in shoulders and thigh. Intelligence good. Tongue slightly coated. Skin natural. Bowels costive. Pulse 64.	Potass. Iod. gr.v ter die.
80	68	F.	3 weeks.	Pain in whole of right arm and hand. Tongue natural. Appetite fair. Bowels regular. Pulse 92.	Quin. Sulph. gr.j ter die. 7th day Tinct. Guiac. Am. ℥j ter die. 24th day substituted Potass. Iod. gr.v } ter die. Vin. Colch. gtt.x }
81	45	F.	1 month.	Right foot little swollen and somewhat painful. Tongue slightly coated. Appetite poor. Bowels regular. Pulse 92.	Tinct. Guiac. Am. ℥j ter die.
82	29	M.	4 weeks.	Pain in back, hip and foot. Tongue clean. Appetite poor. Bowels regular. Sleeps poorly. Pulse 60.	Tinct. Ferri. Chloridi. 7th day, Syr. Triple Phosphates. ℥j ter die.
83	22	M.	40 days.	Ankle swollen and painful. Skin natural. Tongue with yellowish coat. Appetite good. Bowels regular. Pulse 100.	Vin. Colch. Rad. gtt. xii. every 2 hours. 4th day, Propylamiæ m. xxiv. Aq. Menth. Pip. ℥ ji. Syr. Simp. ℥ iv. ℥ ss every two hours instead of colchicum. End of two months, Potass. Iod. gr. v. ter die.
84	30	M.	2 months.	Two months ago when lifting heavy load felt sudden sharp pain in back. Has had several attacks like this. Acute pain now on attempting to raise himself. Tongue natural. Appetite good. Bowels regular. Pulse 68.	Potass. Iod. gr. v. ter die. Tinct. Cantharides ℥ j Lin. Saponis ℥ iij To painful parts.
85	45	F.	4 days.	Pain in ankle. Tongue natural. Appetite good. Bowels regular. Pulse 88.	Tinct. Guiac. Am. ℥ j ter die.
86	27	F.	3 weeks.	Pain and tenderness in shoulder extending into arm. Intelligence good. Skin cool. Tongue pale but clean. Bowels costive. Pulse 88.	Pulv. Ip. et Op. gr. v. hourly for first day.
87	46	M.	10 days.	Pain and swelling in ankle, wrist and elbow. Intelligence good. Skin natural. Bowels regular. Pulse 88.	Vin. Colch. Rad. gtt. xv. ter die.
88	19	M.	6 weeks.	Pain, redness and swelling of knee and ankles. Skin natural. Bowels regular. Pulse 104.	Vin. Colch. Rad. ℥ ss } gtt. xv. Potass. Iod. ℥ ij } ter die.
89	35	F.	2 weeks.	Ankles and knee painful and much swollen. Tongue clear. Appetite good. Bowels regular.	Tinct. Guiac. Ammon. ℥j ter die. Tinct. Iodini locally.
90	45	M.	5 weeks.	Pain in knees and ankle. Skin natural. Appetite poor. Bowels regular. Sleeps little. Pulse 108.	Potass. Iod. gr. v } ter die. Vin. Colch. Rad. gtt. xv }
91	26	F.	2 weeks.	Ankles slightly swollen and painful. Skin natural. Tongue dry. Bowels costive.	Lin. Opii to joints.

(*Continued.*)

State of heart throughout.	Progress.	Days in Hospital.	Result.
Normal.	Nearly relieved from pain at once.	18	Nearly Well.
Normal.	Rapid.	6	Much Relieved.
Normal.	Gradual improvement.	30	Well.
Normal.	Gradual improvement.	30	Well.
Normal.	Gradual.	17	Relieved.
Normal.	Very slow. Pain confined to ancle.	70	Much Relieved.
Normal.	Rapidly improved.	15	Well.
Normal.	Gradual.	30	Well.
Normal.	Rapid.	14	Well.
Normal.	Slow.	40	Well.
Normal.	Slow with relapses.	60	Well.
Normal.	Slowly improved.	35	Well.
Normal.	Severity of attack had passed before admission. Steadily improved while in hospital.	9	Well.
Normal.	Acute symptoms had subsided before admission. Soon relieved of pain but remained for other troubles.	30	Well.

(*Continued.*)

No.	Age.	Sex.	Duration before admission.	Character of attack on admission.	Treatment.
92	29	F.	6 days.	Pain in feet and ankles, particularly in morning. Tongue with brownish coat. Appetite good. Bowels regular. Pulse 92.	Tinct. Guiac. Am. ℥j. ter die. Potass. Acet. ℥ij. daily.
93	20	F.	3 weeks.	Much pain in ankle and shoulder. Left foot and ankle red and swollen. Tongue with light coat. Appetite poor. Bowels costive. Pulse 88.	Same as above.
94	22	F.	12 days.	Pain in back and sides. Intelligence good. Cheeks flushed. Skin natural. Tongue clear. Appetite fair. Bowels regular. Pulse 84.	Tinct. Acouite, Fol. gtt. xxx. Quin. Sulph. gr. xvi. Mist. Formyli. ℥ij. ℥j 4 times a day.
95	25	F.	1 week.	Complains now only of pain in lower half of right chest. Appetite poor. Catamenia present and regular.	Tinct. Ferri Chloridi.
96	40	F.	2 weeks.	Much pain in left ankle. Bowels regular. Appetite good.	Sulphur and cotton batting to ankle. Tinct. Iodini 9th day.
97	25	M.	5 weeks.	Stiffness in left shoulder. Tongue slightly coated. Appetite good. Bowels regular. Pulse 100.	Potass. Iod. gr. v. ter die. Tinct. Iodini locally 8th day. Vin. Colch. gtt. xx. with the Iodide. 18th day, Syrp. Phos. Trip. ℥j ter die.
98	22	F.	4 days.	Knees painful and somewhat swollen. Bowels costive. Sleeps poorly. No appetite. Considerable perspiration. Tongue clean.	Tinct. Iodini to knees 16th day. Tinct Ferri. Chlor.
99	20	F.	6 weeks.	Right knee and hip somewhat painful and swollen. Tongue clean. Appetite good. Bowels costive. Feels weak.	Tonics.
100	35	M.	12 days.	Left knee and ankle much swollen and painful. Intervening portion œdematous. Left elbow slightly red, swollen and painful. Tongue thinly coated. Bowels costive.	Potass. Iod. gr. v. ter die. 16th day, tonics.
101	32	M.	1 week.	Right shoulder, elbow, and joints of lower extremity swollen and painful. Appetite poor. Bowels regular.	Sulphur and cotton to joints. Pulv. Ip. et Op.
102	24	F.	2 weeks.	Right ankle and knee and left shoulder slightly swollen and painful. Appetite poor. Bowels regular.	Potass. Iod. gr. v. ter die.
103	38	M.	4 days.	Pain and considerable swelling of left knee. Appetite poor. Thirst normal. Bowels generally regular.	Lin. Opii. to leg. Afterwards Tinct. Iod. Eth.
104	30	M.	2 weeks.	Pain in raising right arm. Some swelling of feet. Tongue thinly coated. Appetite good. Bowels regular. Pulse 78.	Potass. Iod. gr. v. ter die.

(*Continued.*)

State of heart throughout.	Progress.	Days in Hospital.	Result.
Normal.	Return of pains on 16th day. Otherwise progressed rapidly.	13	Well.
Normal.	Rapid.	9	Well.
Normal.	Complained mostly of headache, vomiting and constipation.	30	Well.
Normal.	Before admission had complained of pain and swelling of joints. Rapidly improved.	7	Well.
Normal.	Gradual.	24	Well.
Normal.	Gradual.	21	Well.
Normal.	Right knee almost immediately relieved. Pain lingered in the left.	30	Well.
Normal.	Severity of disease had passed before admission. Improved rapidly.	7	Well.
Normal.	Left became more swollen and very painful. Also had pulmonary trouble with considerable fever. 22d day distinct fluctuation. Transferred to surgical ward.	22	. . . .
Normal.	Rapid.	16	Well.
Normal.	Rapid.	10	Well.
Normal.	Pain immediately relieved and swelling began to diminish.	9	Nearly Well.
Normal.	Did not suffer while in Hospital.	13	Much Relieved.

(*Continued.*)

No.	Age.	Sex.	Duration before admission.	Character of attack on admission.	Treatment.
105	43	F.	25 days.	Slight pain in side. No pain in joints. Tongue thinly coated. Bowels regular.	Potass. Iod. gr. v. ter die. 11th day, Tinct. Guice. Amm. ʒss ter die substituted. 23d day, tonics.
106	70	M.	5 weeks.	Pain and redness of ankles. Tongue natural. Bowels costive.	Potass. Acet. et Bicarb. aa ʒss ter die. 14th day, tonics. 17th day, Vin. Colch. Sem. gtt xv. Tinct. Opii gtt v ter die. Omitted after 10 days.
107	31	F.	5 days.	Both knees and ankles painful and slightly swollen. Appetite poor. Tongue thinly coated. Skin moist. Pulse 100.	Potass. Iod. gr. v. ter die. 14th day, tonics.
108	25	M.	4 weeks.	Stiffness with pain on motion in hips, ankles, knee and shoulder. Skin moist and cool. Appetite good. Tongue clean. Bowels costive. Pulse 104.	Syr. Calcis gtt. xx. every 2 hours. Sodæ Bicarb. / Tinct. Opii aa ʒss / Aquæ Oss } to joints.
109	26	F.	1 week.	Pain and slight swelling of left wrist and hip, and right ankle. Tongue slightly coated. No appetite. Sleeps poorly.	Potass. Bicarb. et Acet. aa ʒss. Aquæ and Lig. Am. Acet. aa ʒss every three hours. Tenth day, Colch. Vin. gtt. x. added to each dose. 25th day, first prescription omitted. Potass. Iod. gr. v. substituted.
110	28	M.	5 days.	Pain in joints of both legs. Tongue clean and dry. Appetite poor. Bowels very costive. Pulse 96.	Potass. Acet. ʒj every 3 hours. Sixth day, omitted. 13th day, Vin. Colch. gtt. xx. ter die.
111	39	M.	4 weeks.	Pain in right ankle and knee, latter swollen. Tongue with white coat at centre. Bowels costive. Pulse 80.	Potass. Acet. ʒj ter die. Sixth day, Potass. Iod. gr. v.
112	22	M.	20 days.	Large joints painful and somewhat swollen. Bowels costive.	Potass. Acet. ʒij / Aquæ ʒviii } ʒss quater die.
113	58	M.	10 days.	Pain in both knees and left hip. Tongue clean. Appetite good. Bowels regular.	Sol. Potass. Bromid. ʒij for first day.
114	58	M.	3 weeks.	Right shoulder, wrist and left elbow swollen and painful. Skin warm and moist. Tongue slightly coated. Appetite poor. Pulse 112.	Potass. Acet. ʒss during day. 8th day, Tinct. Iodini to cardiac region. 11th day, Vin. Colch. Sem. ʒij / Tinct. Digitalis ʒj / Potass. Iod. ʒj } ʒxv. ter die.
115	37	M.	8 days.	Pain in large joints of lower extremeties. Profuse perspiration. Tongue with thick clammy coat. Appetite poor. Pulse 84.	Potass. Acet. ʒj every four hours. 9th day, Potass. Iod. gr. v. ter die.
116	27	F.	6 days.	Left ankle and knee swollen and painful. Tongue slightly coated. Appetite good. Bowels costive. Pulse 96.	Potass. Acet. ʒj quater die. 20th day, put on Iodide.
117	31	M.	18 days.	Wrists painful and swollen. Hips painful at night. Skin natural. Appetite poor. Tongue clean. Pulse 72.	Potass. Acet. ʒss during day. 15th day, Potass. Iod. gr. v. substituted. 27th day, Syrupi. Trip. Phos. ʒj ter die.

(*Continued.*)

State of heart throughout.	Progress.	Days in Hospital.	Result.
Normal.	Before admission had suffered much pain in joints, which returned a few days after admission. Progressed slowly.	35	Much relieved.
Normal.	Slow.	60	Nearly Well.
Normal.	Slowly improved.	40	Well.
When discharged little roughness with first sound, most distinct at apex.	No pain after fifth day.	22	Well.
Normal.	Slow.	60	Well.
Normal.	Slow. Pain continually returning.	45	Well.
Normal.	No pain was felt after second day, but only stiffness.	14	Well.
Normal.	Had had an attack of rheumatism six weeks before.	27	Well.
Normal.	Second day almost free from pain.	4	Well.
Normal in admission seventh day. Rasping sound most distinct an inch below and outside left nipple. Eleventh day much diminished. Fourteenth day had almost disappeared.	Slow.	35	Well.
Fifth day sounds of heart were feeble and continued so several days. No murmur throughout.	Fifth day pain had disappeared, but there was feeling of oppression in cardiac region. Occasional soreness.	17	Well.
Normal on admission. 3d day murmur with first sound over third costal cartilage. Next day had disappeared. 5th day systolic soufflé heard over base and transmitted into carotids. Normal when discharged.	Gradually improved.	30	Well.
Normal.	Gradual, with relapses.	30	Well.

(*Continued.*)

No.	Age.	Sex.	Duration before admission.	Character of attack on admission.	Treatment.
118	29	F.	1 week.	Both ankles swollen and painful. Shoulder and knees less affected. Tongue coated. Bowels costive. Pulse 120.	Potass. Acet. gr. xx. quater die. 3d day, dose doubled. 10th day, Vin. Colch. gtt. xx. ter die. 25th day, Ol. Morrhuæ. Continued three weeks.
119	17	F.	1 week.	Pain in shoulders left hand and knees. Bowels costive. Thirst urgent. Tongue coated. Bowels regular. Pulse 120.	Potass. Acet. gr. xx. ter die. Tinct. Iodini locally. 20th day, Potass. Iod. gr. v. ter die substituted.
120	35	F.	4 days.	Pain, redness and swelling of both ankles and both knees. Pain in both hips. Tongue with dry coat. Appetite poor. Considerable thirst. Pulse 108.	Emplastra Vesicata to painful parts. 20th day, Potass. Iod. Tinct. Iodini over cardiac region. 24th day, Tinct. Digitalis gtt. v. ter die.
121	19	F.	10 days.	Redness and swelling of all the larger joints. Tongue with brown coat. Anorexia. Pulse 102.	Potass. Acet. ℈ii ter die. Tinct. Iodini to more painful parts. 19th day Potass increased to ℥j. End of month Potass. Iod. substituted.
122	19	F.	4 days.	Pain and swelling of hands, knees and ankles. Tongue with white coat. Much thirst. Appetite good. Bowels regular. Pulse 100.	Potass. Acet. ℥ss ter die. 9th day, Potass. Iod. gr. v. ter die substituted.
123	42	M.	8 days.	More or less pain in all the joints. Swelling of knee only. Tongue with creamy coat. Appetite poor. Considerable thirst. Pulse 84.	Potass. Acet. ℈j quater die. 2nd day increased to ℈ii. 8th day, Potass. Iod. gr. v. substituted, 38th day, Acetate resumed for few days.
124	45	M.	5 days.	Pain with slight redness and swelling of ankle. Bowels regular. Pulse 92.	Potass. Acet. et Bicarb. ℥ss ter die. 9th day, Potass. Iod. substituted.
125	33	M.	2 weeks.	Pain in shoulders and arms. Tenesmus and scanty discharges. Vomiting.	Potass Acet. et Bicarb. aa ℥ss ter die. 20th day, Potass. Iod. gr. v. substituted for three days. 35th day, first medicine resumed.
126	22	M.	3 days.	Pain in hands, knees, wrists, and ankles. Right knee and ankles red and slightly swollen. Tongue coated. Bowels costive.	Potass Acet. et. Bicarb. aa ℥ ss ter die. 7th day, Quin. Sulph. gr. xxiv. Potass. Bicarb. ℥ss. Tinct. Cardamom, ℥ss. Muc. Acac. ℥j. Aquæ ℥xi. ℥j ter die. 21st day, Pot. Iod. substituted.
127	46	M.	3 days.	Redness and swelling of wrist. Skiu dry. Tongue with white coat. Pulse 72.	Potass. Iod. gr. v. ter die.
128	28	F.	2 weeks.	Left knee inflamed and painful. Tongue coated. Bowels loose.	Potass. Acet. ℥ss, Aquæ ℥iv } ℥ss ter die. 6th day, Potass. Iod. gr. v. ter die.
129	38	M.	2 weeks.	Swelling of joints of lower extremity. Profuse sweating. Tongue with thick white coat. No appetite. Considerable thirst. Urine highly colored. Pulse 108.	Potass. Bicarb. gr. x. } every Lig. Am. Acet. f ℥ij } 2 hours. 8th day, tonics. Potass. Iod. gr. v. ter die.
130	23	M.	7 days.	Pain and tenderness of all the joints and swelling of right wrist. Skin natural. Tongue moist with brownish coat. Respiratiou natural. Pulse 76.	Syrupi Calcis gtt. xx. every two hours.

(*Continued.*)

State of heart throughout.	Progress.	Days in Hospital.	Result.
On admission normal. 14th day, slight soufflé with first sound.	For four days symptoms grew worse. After that recovery was gradual, complicated with gastric symptoms.	90	Well.
On admission slight murmur with first sound.	Pain continued to be severe for four days. After that improved steadily.	40	Well.
Normal on admission. 20th day, systolic soufflé. Normal when discharged.	At first relieved of pain. Afterwards became worse and was delirious. Pain in cardiac region. Pulse 108. In eight days pulse 80. Much better.	30	Well.
Normal.	Pain in joints rapidly subsided. Pulse. 88. Pain afterwards returned. Progress gradual.	60	Well.
Normal.	Rapid recovery until exposure on eighth day brought on renewal of attack. Then improved gradually.	37	Improved.
Normal.	Became chronic.	70	Well.
Normal.	Pain extended to other joints. Slow	45	Well.
Normal.	Complicated with dysentery in early stages.	54	Well.
Normal.	Slow.	90	Well.
Normal.	Had had previous attacks. This one not severe.	28	Well.
Normal.	Pain confined to knee, which remained much swollen for a month. Pain then in side. Relieved by counter irritation.	90	Well.
Normal.	Rapid improvement for 10 days. Pain returned and inclined to become chronic.	30	Improved.
2d day, soft mitral systolic murmur.	Rapid.	13	Well.

(*Continued.*)

No.	Age.	Sex.	Duration before admission.	Character of attack on admission.	Treatment.
131	21	F.	8 days.	Pain, redness and swelling of joints of right arm. Countenance flushed. Skin warm and moist. Tongue clean. Pulse 118. Bowels costive.	Syrupi Calcis gtt. xx. hourly.
132	29	F.	7 days.	Pain in ankles and knees. Skin natural. Tongue clean. Pulse 60. Respiration easy. Bowels regular.	Syrupi Calcis gtt. xx. every two hours. Potass. Acet. ℥ij, Aquæ ℥ij } ℥j ter die.
133	20	F.	10 days.	Pain in knees. Skin warm and dry. Respiration easy. Tongue moist. Bowels regular. Pulse 92.	Potass. Acet. Potass. Bicarb. aa ℥ ss. every 3 hours 6th day Pot. Iod. gr. v. ter die.
134	25	F.	2 days.	Pain, redness and swelling of ankles and wrist. Skin warm and moist. Tongue with white coat. No Appetite. Much thirst. Pulse 120.	Potass. Bicarb. ℥ij, Potass. Acet. ℥ij, Potass. Nit. ℈iii, Liq. Ant. Acet. ℥viii } ℥ij in acidi Citrici ℈iv. Next day, Potass. Acet. et Bicarb. aa ℥ ss. every four hours. After 3 days original medicine resumed. 9th day, Potass. Iod. gr. v. ter die substituted.
135	29	M.	3 weeks.	Pain, redness and swelling of wrist and knee. Skin warm and moist. Tongue moist with white coat. Pulse 92.	Potass. Acet. et Bicarb. aa ℥ ss every 3 hours. 20th day, Tonics. 24th day on return of pain, Vin. Colchici gtt. xx.
136	48	F.	10 days.	Pain in knees and feet. Latter swollen and red. Tongue slightly coated. Appetite poor. Bowels costive. Pulse 92.	Potass. Acet. et Bicarb. aa ℥ ss every three hours. 13th day, tonics. 23d day, Potass. Iod. gr. v. ter die.
137	50	M.	2 months.	Pain and swelling of elbows, shoulders, knees, ankles, and hand. Skin cool and moist. Appetite good. Bowels costive. Pulse 72.	Potass. Iod. gr. viii. ter die. 20th day reduced to gr. v.
138	32	M.	2 months.	Pain in most of the joints. Appetite good. Tongue clean.	Potass. Iod. gr. v. } ter Vin. Colch. Rad. gtt. xx. } die.
139	19	F.	10 weeks.	Pain and swelling of joints of lower extremities. Countenance anxious. Skin dry. No appetite. Bowels costive. Pulse 135.	Pulv. Colch. Rad. Pulv. Ip. et. Op. aa gr. iii. Sal Rochelle ℥ ss. Every 4 hours. Omitted on 6th day, Vini Colchici glls. xx. every 4 hours.
140	25	F.	1 week.	Pain in hips, shoulders and knees. Appetite poor. Skin warm and moist. Thirst urgent. Bowels regular. Pulse 100.	Pulv. Ip. et Op. gr. v Pulv. Colch. Rad. gr. iv Sod. et Pot. Tart. ℥ ss } quater die. 13th day, tonics.
141	27	F.	17 days.	Ankles painful and swollen. Some pain in wrists and shoulders. Skin warm and moist. Tongue with white coat. Bowels regular. Pulse 90.	Pulv. Colch. Rad. gr. iv Pulv. Ip. et Op. gr. v Sodæ et Pot. Tart. ℥ ss } ter die. 6th day substituted:— Sodæ Bicarb. ℥ ii Decoct. Hordei Oj } during day. 12th day substituted:— Vin. Colch. Rad. gtt. xv Tinct. Opii. gtt. x } every 3 hours.
142	20	F.	5 weeks.	Pain, redness and swelling of knee, hands and shoulder. Skin warm and moist. Tongue coated. No appetite. Pulse 96.	Potass. Iod. gr. vi. ter die. 5th day Sodæ Bicarb. Pot. Bicarb. aa ℥ ij during day. 9th day substituted. Pulv. Colch. Rad. gr. iv Pulv. Ip. et Op. gr. v. } ter die. Sodæ et Pot. Tart. ℥ ss. Omitted on fourteenth day. Quin. Sulph. gr. i. ter die.

(*Continued.*)

State of heart throughout.	Progress.	Days in Hospital.	Result.
Normal on admission. Second day soft systolic murmur at apex.	Very rapid.	3	Well.
Normal.	Rapid. No pain after fifteen days.	29	Well.
Normal.	Rapid. Confined throughout to knees.	7	Improved.
Normal.	Slow. Pain mostly confined to wrists and ankles.	40	Relieved.
Normal on admission. Twenty-fourth day, slight systolic souffle at apex.	Slow with relapses.	30	Well.
Normal.	Slow. Had had rheumatism several times during past 5 years. Was much constipated.	. .	Well.
Normal.	Steadily improved.	30	Well.
Normal.	Was in Hos'l during previous month and was discharged relieved. Rapidly improved while in Hos'l this time.	15	Well.
Normal.	Pain continued to be severe for 9 days. Then rapidly improved.	30	Well.
Normal.	Rheumatism rapidly improved. Had towards the close an attack of diarrhœa.	30	Well.
Normal.	Improved gradually with occasional return of pain.	40	Well.
On admission systolic souffle at apex. Impulse strong.	Slow.	60	Well.

(*Continued.*)

No.	Age.	Sex.	Duration before admission.	Character of attack on admission.	Treatment.
143	23	F.	4 days.	Pain, swelling and slight redness of knees, hips, ankles and right shoulder. Skin hot and dry. No appetite. Tongue with creamy coat at centre.	Syrupi Calcis gtt. xx. hourly. Sixth day every two hours.
144	23	F.	5 days.	Pain in nearly all the joints. Bowels costive. Pulse 112, regular.	Simple sedative at night. Eighth day Sodæ Bicarb. and Potass Acet. aa ʒss every two hours. Twentieth day Syrupi Calcis gtt. xx. every two hours, substituted. Thirtieth day substituted Pot. Iod. gr. v. ter die. Fortieth day omitted. At close opiates and astringents, p. r. u.
145	30	F.	1 week.	Pain, redness and swelling of knees and wrists. Pain in elbows and ankles. Skin warm and very moist. Tongue clean. Appetite poor. Bowels regular. Pulse 120.	Syrupi Calcis gtt. xx. every two hours.
146	37	F.	2 weeks.	Pain, redness and swelling of right ankle. Pain also in left ankle, hips and arms. Tongue with thin, pasty coat at centre. Appetite poor. Bowels costive. Pulse 64.	Syrupi Calcis gtt. every two hours. After twelve days, tonic. 35th day, Pot. Iod. gr. v. ter die.
147	12	F.	1 week.	General weakness of joints with some redness and swelling. Skin warm and dry. Tongue clean. No appetite. Considerable thirst. Pulse 90.	Syrupi Calcis gtt. xx. every two hours.
148	30	M.	19 days.	Knees, ankles, hands red and swollen. Tongue coated. Appetite poor. Bowels regular.	Pot. acet. ʒss ter die. Tenth day substituted Pot. Iod. gr. v. ter die. Sixteenth day substituted Vin. Coleh. Rad. ʒss. Syrp. Simp. Syrp. Aurantii aa ʒj. Aquæ Cinnam. ʒiss. ʒj ter die.
149	30	F.	2 weeks.	Swelling and redness of wrist. Swelling of knee and foot. Pain in shoulders, knees and wrist. Tongue coated. Appetite poor. Pulse 108.	Syrupi Calcis gtt. xx. hourly. 5th day, Potass. Permang. gr. ss ter die. Seventh day resumed first prescription. Fifteenth day, Tonics.
150	19	F.	11 days.	Wrists and hands swollen and painful. Skin hot, face moist. Tongue coated. Pulse 102.	Syrupi Calcis gtt. xx. hourly. Fourteenth day omitted. Quin. Sulph. gr. ii Potass. Bicarb. gr. xix Muc. Acac. ʒj Aquæ ʒss } ʒss every 4 hours. Twenty-third day, substituted Potass. Acet. ʒj bis die. Thirtieth day, previous medicine resumed. Fortieth day, tonic.
151	26	F.	4 days.	Pain in hips. Swelling and redness of left foot and hand. Tongue coated. Appetite and sleep poor. Pulse 120.	Syrupi Calcis gtt. xx. hourly. Fourth day, increased to gtt. xxv.
152	—	M.	8 days.	Pain in all joints on slightest movement. Face flushed. Skin moist. Tongue coated. Pulse 100.	Syrupi Calcis gtt. xxv. hourly.

(*Continued.*)

State of heart throughout.	Progress.	Days in Hospital.	Result.
On admission pain in cardiac region and palpitation. No murmur, 8th day. Bruit with systole and diastoles with the first and past after second sounds. Same when discharged.	Pain in joints rapidly subsided.	26	Well.
Eighth day bruit with first sound. Second sound clear. More marked at close of week. In another week less marked. In three weeks had disappeared.	Pain in joints soon relieved. Troubled for long time with pain in epigastrium and side with attacks of diarrhœa.	100	Relieved.
Normal.	Rapid. Had had an attack of rheumatism two months before, from which she had recovered.	20	Well.
Normal.	Slow. Pain continually returning.	60	Well.
Normal.	Rapid.	15	Well.
Normal.	Slow.	35	Well.
On admission souffle at apex following first sound. Twelfth day had nearly disappeared.	Slow.	60	Well.
Normal on admission. Eighteenth day, over apex systolic souffle with accendulated second sound. One month after admission heard at apex over last half of systole and whole of diastole.	Slow, with frequent return of pains.	60	Nearly Well.
On admission slight souffle at end of first sound over base. 12th day much diminished. More diminished when discharged.	Slow.	40	Well.
Normal.	Rapidly improved.	13	Well.

(*Continued.*)

No.	Age.	Sex.	Duration before admission.	Character of attack on admission.	Treatment.
153	22	F.	1 week.	Pain in all the joints, particularly ankle, knee and hip. Countenance flushed. Tongue moist and slightly coated. Pulse 84.	Syrupi Calcis gtt. xxv. hourly.
154	20	M.	3 days.	Pain in nearly all the joints. Some headache. Appetite good. Bowels regular. Pulse 107.	Syrupi Calcis gtt. xxv. hourly. Tenth day omitted. Quin. Sulph. gr. ii Potass. Bicarb. gr. xx Muc. Acac. ℥ii Aquæ ℥j } every four hours.
155	17	F.	4 weeks.	Knees painful and swollen.—Tongue with grayish coat. Appetite good. Bowels regular. Pulse 104.	Syrupi Calcis gtt. xv. ter die. Fifth day, increased to xxv. 7th day, increased to xxx.
156	12	F.	6 days.	Pain in knees, hips, shoulders and ankles. Countenance anxious. Skin hot and dry. No appetite. Tongue clean. Thirst urgent. Pulse 112.	Syrupi Calcis gtt. xx. every two hours. Sodæ Bicarb. ℥ss Tinct. Opii ℥ss Aquæ ℥viii } to joints. 18th day, Syrupi Calcis gtt. xx. every 3 hours. Tr. Iodini over heart.
157	33	M.	5 days.	Pain with some swelling of feet, knees and wrists. Tongue with yellowish white coat. Pulse 88.	Syrupi Calcis gtt. xx. hourly. Potass. Acet. and Bicarb. aa ℥j every two hours.
158	52	M.	1 week.	Pain in knee and feet. Skin warm and dry. No appetite. Bowels costive. Pulse 120.	Syrupi Calcis gtt. xxx. hourly. Vin. Colch. gtt. xi. Mag. Sulph. ℥ss Mag. Carb. gr. xv. } during day.
159	42	F.	2 weeks.	Pain, redness and swelling of knees, shoulders and wrists.—Countenance expressive of pain. Skin hot and moist. No appetite. Considerable thirst. Tongue red & moist. Bowels costive. Pulse 92.	Syrupi Calcis gtt. xxx. every two hours. Vin. Colch. ℥ss Mag. Carb. ℥ss Mag. Sulph. ℥ss } ½ p. r. n. Lime omitted on twelfth day. Tinct. Guiaci Am. ℥j.
160	22	M.	5 days.	Pain in back and joints. Anorexia. Urine scanty and high colored. Pulse 124.	Potass. Acet. ℥j ter die. Tinct. Ferri Chloridi gtts. xx. ter die. ℥j every six hours. Tinct. Guiac. Ammon. ℥j ter die.
161	24	M.	7 days.	Pain and swelling of both hands and feet. Bowels costive.	Potass. Nit. Pulv. Guiac. Vin. Colch. Rad.
162	19	M.	2 days.	Swelling and redness of both feet and right knee. Bowels costive.	Vin. Colch. Rad. Potass Acet. et Bicarb.
163	17	M.	28 days.	Hands and wrists swollen and inflamed. Pulse 100.	Vin. Colch. Sem. gtts. xx. Potass. Acet. ℥ss. ter die.
164	27	M.	17 days.	Both elbows and right ankle swollen and red. No appetite. Pulse 108.	Vin. Colch. Sem. ℥ss ter die.
165	24	F.	6 days.	Both ankles red, swollen and painful. Bowels costive. Tongue coated.	Vin. Colch. Potass. Acet. et Bicarb.
166	21	F.	3 weeks.	Pain in hips, knee and ankles. Pain in præcordia. No appetite. Diarrhœa. Amenorrhœa. Pulse 124.	Potass. Acet. Tinct. Veratrum Viride. Vin. Colch. Tinct. Digitalis. Tinct. Iodini. To seats of pain.

(*Continued.*)

State of heart throughout.	Progress.	Days in Hospital.	Result.
Normal.	Rapid.	10	Well.
Normal.	Slow with return of pains.	60	Well.
Systolic souffle loudest over pulmonary artery throughout illness. Diminished when discharged.	No pain after twentieth day.	40	Well.
Action tumultuous. Bruit with first sound. 7th day, distinct friction sound. When discharged only trace of souffle remained.	Did not suffer much from rheumatism, but complained of dyspnœa and pain in cardiac region.	45	Well.
Normal.	Rapid.	14	Well.
Normal.	Rapid.	9	Well.
Normal.	Rapid.	16	Well.
Souffle with first sound at apex. Same when discharged.	Good progress from beginning.	36	Well.
Slight prolongation of first sound. Second sound reduplicated. Normal when discharged.		51	Well.
Normal.		34	Well.
Normal.		29	Well.
Normal.		29	Relieved.
Souffle with first sound during attack. Normal when discharged.		46	Well.
Mitral lesion. Same when discharged.		66	Unrelieved.

(Continued.)

No.	Age.	Sex.	Duration before admission.	Character of attack on admission.	Treatment.
167	20	M.	5 days.	Pain and slight swelling in knees and left shoulder. Anorexia. Sweating. Headache. Tongue coated. Bowels costive. Urine scanty and high colored.	Vin. Colch. Rad. ℥ aa Morph. Sulph. gr. ii Muc. Acac. ʒj aa Aq. Cinnamoni ʒii } ℥j ter die. 12th day, Tinct. Iodini to præcordia. 14th day, Ext. Hyoscyami. ℈i. Hydragyri Subrum. gr. xii. Fiant pilulæ No. xii 1 ter die. 18th day, Tinct. Digitalis every six hours. 21st day, omit pills. 22d day, omit Digitalis. 30th day, Tinct. Guiac. Am. ʒj. 37th day, omitted. Tonics.
168	22	M.	1 month.	Pain in right arm and shoulder. Little redness or swelling. Urine high colored. Tongue with brown coat. Pulse 108.	Potass. Acet. ℈i ter die. Tinct. Iodini to shoulders. Afterwards Potass. Iod. gr. v. ter die. Tinct. Iodini to præcordia.
169	25	M.	18 days.	Pain in hips, knees and shoulders. Bowels regular. Urine high colored.	Pot. Acet. ʒj ter die. Tr. Digitalis gtt. v. ter die. Bismuth, Sub. Nit. Afterwards tonics.
170	45	F.	2 weeks.	Pain in hand and shoulder. Anorexia. Night sweats. Bowels costive. Urine high colored. Pulse 96.	Vin. Colch. Rad. Muc. Acac. aa ʒj Morph. Sulph. gr. iv Aq. Cinnamon ʒ ii } ʒij every 5 hours.
171	15	F.	1 week.	Pain in larger joints. Anorexia. Urine high colored. Bowels costive. Pulse 108, bounding.	Pot. Iod. gr. v. ter die. Afterwards, Ferri et Potass. Tart. Sodæ Bicarb. aa ℈iv Syr. Gaulth. ʒiv } ℥ aa ter die.
172	30	F.	5 days.	Pain and swelling in knee, ankle, wrist and elbow. Tongue coated. Urine high colored. Pulse 112.	Vin. Colch. Rad. gtt. x Tinct. Hyoscyami gtt. xxx } ter die.
173	20	F.	7 days.	Pain and swelling in knees and ankles. Tongue coated. Bowels regular. Urine high colored.	Pot. Acet, ʒii. Aquæ Oj. ʒi. every four hours afterwards. Vin. Colch. Sem. ʒii Tinct. Hyoscyami ʒj } ʒ ss ter die.
174	45	M.	3 weeks.	Redness, and swelling of knees, feet and ankles. Bowels costive.	Potass. Iod. gr. v. ter die.
175	38	M.	5 days.	Swelling and redness of both ankles and knee. Tongue coated. Bowels free. Appetite poor.	Potass. Bitart. Vin. Colch. gtt. xv. ter die. Cotton batting.

(*Continued.*)

State of heart throughout.	Progress.	Days in Hospital.	Result.
Normal on admission. Slight souffle with first sound at discharge.	Good till 12th day; then complications came on. Sat up all day four weeks after admission.	101	Much Relieved.
Normal on admission. Slight systolic souffle at discharge.	6th day, no pain but much stiffness. 26th day, cardiac complication.	38	Well.
Normal.	Slight diarrhœa 3d day.	35	Well.
Normal.	38th, erythematous eruptions on back. Relieved by external applications.	114	Well.
Normal.	No complications.	170	Well.
Normal.		17	Well.
First sound prolonged when admitted. No murmur at any time.	No complication.	50	Well.
Normal.	No complication.	88	Well.
Normal.	No complication.	88	Well.

SUMMARY OF CASES OF ACUTE RHEUMATISM.

ALKALINE AND NON-ALKALINE TREATMENT.

Whole number of cases 300

Under alkaline treatment 125
Under non-alkaline treatment 175

HEART AFFECTED.

Under alkaline treatment 27
Under non-alkaline treatment 38

65

HEART UNAFFECTED THROUGHOUT.

Under alkaline treatment . . . . . in 98 cases.
Under non-alkaline treatment . . . . . in 137 cases.

Total, 235

HEART AFFECTED ON ADMISSION OR LESION COMING ON DURING FIRST DAY.

Under alkaline treatment . . . . . in 10 cases.
Under non-alkaline treatment . . . . . in 14 cases.

Total, 24

HEART BECAME AFFECTED AFTER FIRST DAY IN HOSPITAL.

Under alkaline treatment . . . . . in 17 cases, $13\frac{22}{31}$ per cent.
Under non-alkaline treatment . . . . . in 24 cases, $13\frac{5}{7}$ per cent.

CARDIAC DISEASE DISAPPEARED WHILE IN HOSPITAL.

Under alkaline treatment . . . . . in 7 cases.
Under non-alkaline treatment . . . . . in 9 cases.

FORM OF HEART DISEASE.

ENDOCARDIAL.

Under alkaline treatment . . . . . in 24 cases.
Under non-alkaline treatment . . . . . in 36 cases.

PERICARDIAL.

Under alkaline treatment . . . . . in 8 cases.
Under non-alkaline treatment . . . . . in 4 cases.

AVERAGE DURATION.

Under alkaline treatment . . . . . $24\frac{3}{4}$ days.
Under non-alkaline treatment . . . . . $32\frac{1}{15}$ days.

LONGEST CASE.

Under alkaline treatment . . . . . 90 days.
Under non-alkaline treatment . . . . . 170 days.

SHORTEST CASE.

Under alkaline treatment . . . . . 5 days.
Under non-alkaline treatment . . . . . 3 days.

ARTICLE VI.

TREATMENT OF SKIN DISEASES.

BY HOWARD F. DAMON.

The Department for the Treatment of Skin Diseases among Outpatients was first opened April 11, 1868. The total number of persons affected with cutaneous diseases treated in this department previous to June 1, 1869, was about nine hundred; while the total number of cutaneous diseases was somewhat more than a thousand. Three thousand visits and upwards have been made by these patients while under treatment. Many patients with interesting and severe forms of skin disease were admitted into the Hospital on account of their inability to pursue their ordinary occupations while thus affected, and the greater facilities afforded there for observation and treatment.

It is our purpose in this paper to present in as concise a manner as possible, without resorting to the use of tables, the number, sex and age of those affected, together with the approximate duration and causes of the different cutaneous diseases.

Nearly all of the patients belonged to the laboring classes, or were the children of the poor. Many of them were destitute of proper nourishment, were

over-worked, and but thinly clad. The occupations of some were such as to induce, in those at all susceptible, the diseases for which they presented themselves for treatment, and of which they had previously suffered repeated attacks.

Climate, or the geographical position, together with the peculiar habits of a people, have much to do with the character and prevalence of cutaneous diseases; nevertheless, there are certain affections of the skin which are the heritage of all nations, but whose numerical relations depend in a measure upon the above conditions. It will be interesting to know whether, in the migrations of the inhabitants of the Old World, there is any change in the type or prevalence of certain cutaneous diseases. We would naturally suppose that the cutaneous covering might be the first part of the system to suffer from the vicissitudes of climate. In this point of view, a comparison of our statistics with the elaborate tables of Prof. Erasmus Wilson, in his Journal of Cutaneous Medicine, will afford some grounds for the opinions which we must at present entertain. If it shall be shown that many cutaneous diseases differ in their prevalence, form, intensity, and duration on different parts of the globe, that there is a nationality in diseases of the skin as well as in other diseases, that there is a geographical range or limit to certain nosodermata, will not then the differences of opinion which now exist among dermatologists as regards what seem to be local or endemic varieties of skin disease, receive at once an explanation as gratifying

as it is unexpected? The dermatologist will then give more attention than he now does to this part of his study; and the whole science, like that of botany, or of zoölogy, will be enriched by the united labors of many distant but mutually dependent observers.

ECZEMA.

Two hundred and twenty-nine persons were affected with eczema; one hundred and forty-one females, and eighty-eight males. Eighty-five of the whole number were under ten years; thirty, from ten to twenty; thirty-seven, from twenty to thirty; twenty-three, from thirty to forty; nineteen, from forty to fifty; twenty-two, from fifty to sixty; eleven, from sixty to seventy; and one was seventy-eight, and one was eighty-one years old. Thus, it will be seen that there was a large excess of females over the males. The majority of the patients affected with this disease belonged to the period of childhood and youth; and about half as many cases occurred from twenty to fifty years of age as there were previous to that period of life. From the fiftieth year upwards, there were only thirty-five cases of eczema. The different stages, or pathological conditions of the disease, at the time of application for treatment, were as follows: —

Humid stage of eczema, *Eczema humidum.*	vesiculosum	74
	ichorosum	10
	pustulosum	32
	Total	116

Dry stage of eczema, *Eczema siccum.*	rubrum	42
	rimosum	23
	papulosum	11
	squamosum	19
	crustosum	9
	œdematosum	7
	sclerosum	2
	Total	113

The humid forms of eczema were much more frequent in children than in adults; and in many instances were excited by external irritants. Infancy especially afforded a large field for the manifestation of these morbid phenomena. A careful examination of a large number of cases of eczema in infants, shows the disease to begin as early as the second week after birth, not as is commonly thought only at the time of dentition, and especially in those children who have been frequently washed with strong alkaline soaps. How much there may have been in the diathesis of these little patients to favor such a result we do not pretend to say; but it is quite probable that this source of irritation was the exciting, although it may not have been the original, cause of the disease. We would not for a moment inculcate negligence on the part of mothers in regard to such important matters of hygiene; but merely suggest that the proper use of mild soaps contributes much to the beauty and health of the infant's skin.

IMPETIGO.

There were one hundred and forty-five cases of impetigo or pustular eruption of the skin; seventy-five of which were males, and seventy females. Seventy-nine patients were under ten years of age; forty-one were from ten to twenty; fifteen, from twenty to thirty; six, from thirty to forty; two, from forty to fifty; and one was aged sixty-five, and one sixty-eight years. The distribution of the eruption upon the cutaneous surface was as follows: on the scalp, in forty-nine cases; face, in forty-four; legs, in ten; scalp and body, in six; hands, in five; arms, in four; body and extremities, in four; arms and legs, in three; face and neck, in three; neck, body, shoulders, separately, in two cases each; scalp and face, in two; scalp and neck, in two; scalp and arms, in two; face and arms, in one case; face, arms, and legs, in one; neck and hand, in one; arms and hands, in one; and nates, in one case. The great rarity of the disease upon the covered portions of the body will be observed. This fact is of more than ordinary significance as regards the causes of this pustular eruption of the skin. The occurrence of pustules or impetigo almost exclusively in children and young persons, must of necessity depend upon some constitutional or local cause. The greater susceptibility of the skin of children to external influences, and the custom of leaving a large portion of its surface unprotected by the dress, render this sensitive membrane liable to various kinds of external

irritation. The uncovered portions of the body are also more accessible than the covered parts to the injudicious use of the finger-nails, whenever the sensibility of the skin is unduly awakened. Some of the external causes of irritation of the skin are to be found in the occasional presence of the spores of certain microscopic plants upon its surface, or imbedded in its epithelium; and the invasion of such animal parasites as the pediculus, the cimex lectularius, the pulex penetrans, and the acarus scabiei or sarcoptes hominis. These parasitic plants and animals constitute in one sense a distinct fauna and flora of the skin; but the pathological changes which they produce in this membrane are in no respect different from those in ordinary inflammations of the skin due to traumatic causes. Thus, some of the patches of eczema marginatum or herpes circinatus cannot, in the present state of our knowledge, be distinguished from other artificial eczemas by any special character of the inflammatory process.

SYPHILODERMATA.

There were fifty-six cases of Syphilodermata; thirty-four females, and twenty-two males. Seven patients were under twenty, five of whom had hereditary syphilis; while in the other two patients, aged nineteen and nineteen and a half years, the disease was acquired. There were nineteen patients from twenty to thirty years of age; sixteen from thirty to forty; seven from forty to fifty; six from fifty to sixty; and one aged sixty-five years. The different

LICHEN SYPHILITICUS ANNULATUS

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varieties of cutaneous syphilis are represented as follows: syphiloderma tuberculatum, eighteen cases; rupia, eighteen cases; lichen, three; psoriasis, three; syphilitic ulcers, twelve cases; and papillomata, two cases. Many of the patients had other symptoms of syphilis, such as sore throat, iritis, neuralgia, nodes, tubercula gummata, alopecia, cicatrices, excess of pigment, and frequent abortions and miscarriages, without any other assignable cause. Some of the patients, after several abortions and miscarriages, had given birth to children who subsequently manifested signs of hereditary syphilis.

ERYTHEMA.

Erythema occurred in forty-four cases, twelve of which assumed the tubercular form, ten the œdematous, four the nodose, and five the papular form. In the remaining thirteen cases, the redness was diffuse, and occupied either the face or extremities. Erythema of the face occurred five times; twice in consequence of previous frost-bite, twice from neuralgia, and once after a recurrent attack of erysipelas. The leg was affected by erythema twice from unknown causes, and once in consequence of former injury. The foot was affected in one instance by erythema pernio, or frost-bite; the hands once by erythema pernio, and once after erysipelas. There was one case of erythema intertrigo of the neck in a young child; and a case of erythema marginatum of the groin, also in a child. Erythema papulatum occurred in persons who had been subject to rheumatism, and affected the

backs of the hands, wrists, and forearms, the knees and superior and anterior portions of the legs. Erythema nodosum affected only young women and children, and was generally limited to the anterior portions of the legs, and the dorsal surfaces of the forearms. This form of erythema also appears to be of a rheumatic character. Erythema tuberculatum, and erythema œdematosum, which together constitute one-half of the cases observed, are of such frequent occurrence, and so much more marked in their symptoms here than those diseases appear to be elsewhere, that we are unavoidably led to the conclusion that these forms of erythema are more or less endemic in this part of New England; and are probably due to the sudden and extreme changes in the temperature and hygrometric conditions of the atmosphere, particularly on our sea-coast. Extensive observations made by Dr. Silas Durkee, one of the consulting surgeons of the City Hospital, and by myself, seem to confirm this opinion. Nearly forty cases of erythema tuberculatum have been observed by Dr. Durkee during the last twenty years that his attention has been particularly directed to the study of this disease; and somewhat more than half of these cases have been seen by myself in conjunction with Dr. Durkee. As the disease has been very correctly represented by means of chromo-lithographs, in published articles on the subject, in which he has given us the result of his careful investigation into the natural history and minute pathology of this remarkable form of erythema, we would refer those in-

terested in the subject to those sources for further information.

FURUNCULOSIS.

There were fifty-one patients affected with furunculosis, or boils; twenty-nine females, and twenty-two males. There were twenty-nine patients thus affected who were under ten years of age; six, from ten to twenty; two, from twenty to thirty; five, from thirty to forty; five, from forty to fifty; two, from fifty to sixty; and one who was sixty-six, and one seventy-eight years old. There were furunculi on the face in twenty-three cases; on the scalp in eleven; on the neck in seven; and on the shoulders in five cases. In the remaining five cases, the disease was situated on the nates, thighs, and arms. Furunculi of the face, scalp, neck, and shoulders were often attended with the same disease on other parts of the skin. In some instances, the furunculi were very numerous; from ten to fifty being observed on a single region, such as the face, shoulders, or nates. Occasionally furuncular abscesses formed, which varied in size from a pea to a large chestnut. The principal causes of this disease were profuse sweating of the face, neck, and shoulders, other cutaneous affections, local irritation of the skin, and debility. The disease occurred almost exclusively in feeble children who had sweat profusely, in domestics, washerwomen, blacksmiths, shoemakers, and those whose indoor occupations were attended with excessive sweating. In many cases there had

been a previous lichenous eruption. Thus, the connection between acute lichen, which is a congested condition of the skin surrounding the apertures of the sudoriferous ducts, and furunculosis, which is a similar condition of the sweat glands themselves, resulting in exudation and suppuration, is made more evident by the close relations of the two diseases in a clinical point of view.

HERPES CIRCINATUS, TONSURANS, IRIS.

Fifty-five different patients were affected with one or more of the varieties of herpes or ringworm. Thirty-two of these patients were females; and twenty-three were males. Thirty-six patients were under ten years of age; nine were from ten to twenty; five were from twenty to thirty; three were from thirty to forty; one was forty-three, and one was sixty-one years old. The different varieties of herpes occurred, numerically as follows: H. circinatus, in twenty cases; H. iris, in twenty-five cases; and H. tonsurans, in seventeen cases. From these numbers it will be observed that some of the patients had more than one variety of Herpes at the same time. These combinations will best be seen by the following table: —

Herpes tonsurans	12
" circinatis	14
" iris	23
" tonsurans, iris, et circinatus	1
" circinatus et iris	1
" tonsurans et circinatus	4
Total	55

HERPES IRIS BULLOSUS

New Lane Lithic to HRH Sussex at St Brides

These different varieties of herpes were situated almost always on those portions of the body which are more or less exposed, especially in children; such as the face, neck, and extremities. H. tonsurans occupied the scalp in every instance except two; these were men affected with H. tonsurans, or ringworm, of the bearded portion of the face. In eighteen cases of herpes, in which there was evidence of contagion, two members of a family were affected at about the same time, or in quick succession, in five instances; three members of a family were affected simultaneously, or nearly so, in one instance; and five members of a family in another instance. Herpes tonsurans was contracted in one instance by a little girl who had played with a kitten affected with the mange. Itching, and the mechanical irritation produced by scratching frequently gave rise to a pustular eruption. This is probably the "impetigo contagiosa" of some writers.

SCABIES.

The whole number of cases of scabies or itch was forty-four. Twice it occurred in three members of a family, and ten times in two members. In the remaining eighteen cases there was no particular history of contagion. In twenty-five cases, the patients were fifteen years of age, and under; while the remaining nineteen cases occurred in persons of all ages between fifteen and seventy-eight. The hands were the most common seat of the disease. In eighteen cases, the burrows of the sarcoptes hominis,

or itch insect, were more or less numerous on the hands. In twenty cases, there was either an eczematous, or an impetiginous affection of the hands, arms, neck and body. The feet and legs were occasionally affected. In one case only were burrows found on the glans penis. This disease had varied in its duration, when first seen, from two weeks to two months. In one instance, it was of five months' duration; and in another, it had lasted a year. In a few cases, there was hyperhidrosis of the hands consequent upon some moderfication in their innervation due to the excessive irritation of these parts.

LICHEN URTICATUS.

There were forty-four cases of lichen urticatus; twenty-four females, and twenty males. Twenty-three of the patients were under ten years of age; four, between ten and twenty; six, between twenty and thirty; six, between thirty and forty; three, between forty and fifty; one was sixty, and in one case the age was not recorded. The eruption consisted of circular blotches or wheals, resembling flea-bites, and appeared successively on certain regions, such as the face, neck and extremities; and occasionally on the body. An individual wheal seldom lasted more than a few hours, and left on its decline a hard papula somewhat raised above the level of the surrounding skin. A vesicle occasionally formed upon the papule. In a few instances, bullæ made their appearance on several of the wheals, giving rise to the form of the disease known as "urticaria bullosa."

The duration of the different cases of lichen urticatus varied from two or three days to two or three months. Errors of diet, profuse sweating, change of climate, and nervous debility were the principal causes of this cutaneous affection.

ACNE DISSEMINATA AND ROSACEA.

There were thirty-three patients treated for acne; fourteen males and nineteen females. Acne disseminata occurred nine times in men, and sixteen times in women; while acne rosacea occurred only five times in men and three times in women. The ages of the men affected with acne rosacea were twenty-four, forty, forty-three, fifty, and fifty-eight; while the ages of the women were twenty-two, twenty-nine, and fifty-three years. The youngest of the men had been the subject of this form of acne for two years, from imperfect digestion; the oldest was affected with pyrosis, and other symptoms of intestinal derangement; the next younger was the subject of chronic eczema of the leg, accompanied by œdema and an eczematous ulcer. The next younger still, aged forty-three, had been for a long time a fireman, or tender of a stationary steam-engine in one of our principal hotels. The remaining case, a man aged forty, had been affected eight months with acne rosacea in consequence of the immoderate use of whiskey. The cases of acne rosacea in females are also interesting as regards the probable causes of this disease. The history of the oldest is incomplete in this respect; while, of the two others, the elder,

aged twenty-nine, was the subject of obstinate constipation and the irregularities in digestion which usually manifest themselves in connection with this symptom. The youngest of the three, aged twenty-two, and whose occupation was that of cook in a hotel, had for a long time unavoidably exposed her face to the fire. Thus, disorders of the digestive organs, or exposure of the face to the fire, were the exciting causes in nearly every instance of this obstinate variety of acne. Half of the cases of acne rosacea occurred in summer, and half in winter; thus, the influence of the summer heat on the sebiparous system is balanced by the effect of exposure to the fire and the use of a more stimulating diet in winter than in summer. Twenty-five cases of acne disseminata were distributed as follows: sixteen in males, and nine in females. Three males were aged respectively, twenty-one, twenty-three, and twenty-nine years; and two females, respectively, twenty-five and twenty-seven years. The average age of the males under twenty-one years of age, who presented themselves with this form of acne, is seventeen. The youngest of these affected was twelve, and the oldest twenty. The average age of the females, under twenty-one, is exactly eighteen. The youngest affected was seventeen, and the oldest twenty. Acne disseminata occurred on the face in all but five cases of this variety of disease. In the latter, it affected the neck, breast and shoulders. The cases presented themselves somewhat more frequently in spring and summer than in fall and winter. Acne

disseminata is peculiar to the age in which sexual development is rapidly advancing; while acne rosacea is essentially a disease of the adult and middle periods of life.

ZOSTER.

Thirty patients were affected with Zoster; eleven males, and nineteen females. Seventeen times it occurred either on the neck, trunk, or extremities, and fifteen times on the face. Among this number, there were two instances of Z. facialis et cervicalis; thus making thirty-two cases of the different varieties of zoster. Thirteen times the eruption occupied the right side of the body, and ten times the left. The two cases of Z. facialis et cervicalis were distributed, one on the right side of the body, the other on the left. There were seven cases of Z. labialis, some of which showed a marked tendency for one or the other side of the face. Neuralgia either preceded, or was a concomitant symptom, in twenty-one cases, Z. labialis being excepted. There was one instance, however, in which Z. labialis was uni-lateral and affected both the upper and lower lip as far as the median line, and was preceded by neuralgia in the teeth of the affected side. The number of cases of Z. facialis was fifteen; of cervicalis, four; thoracicalis, six; abdominalis, three; and of Z. sacralis, two. Fifteen cases of Z. facialis were distributed as follows: Z. labialis, seven; Z. supra-orbitalis vel frontalis, three; Z. infra-orbitalis, two; Z. buccalis, two; and Z. nasalis, one. Fifteen times the disease

occurred in persons under twenty; six times, between twenty and thirty; five times, between thirty and forty; twice, between forty and fifty; and once at seventy-four. The facial varieties of zoster were chiefly due to catarrhal affections of the nasal and bronchial mucous membranes. In some instances, however, the vesicular eruption appeared as an epiphenomenon consequent upon facial or orbital neuralgia. Zoster of the neck, extremities, and trunk was in every instance preceded and accompanied by neuralgia, which was often of an intense character. There was only one case of Zoster of the trunk in an adult; and this occurred in a woman aged forty-five. The eruption was situated on the left side of the thorax, and consisted of large vesicular clusters, one of which was beneath the scapula, one on the side, another near the sternum. The eruption lasted two weeks. The pain in this case was of a severe, burning character, and was felt at times for more than six months afterwards. Zoster of the large nerve-territories appears to be due to rheumatic or traumatic affections of the principal nerve-trunks near their points of emergence from the different bony foramina of the body.

PEDICULI.

Pediculi were observed in twenty-six cases. There were twenty-three cases of pediculi capitis; two cases of pediculi corporis; and one case of pediculi pubis. In twenty-two cases these parasites gave rise to impetigo capitis, in consequence of scratching; in

two cases, they were the exciting cause of prurigo senilis; and in one case they were associated with herpes tonsurans. In the remaining case, there was simple pruritus of the parts. The age of the patient with pediculi pubis was twenty; and of those with pediculi corporis, one was forty and the other seventy years old. The oldest of the remaining twenty-three cases was fourteen years, and the youngest was three years. The average age of those who had pediculi capitis was about eight years.

PRURIGO.

There were twenty-six patients affected with prurigo; sixteen females, and ten males. Twenty-three patients were adults. Of the three remaining patients, a girl aged six and a half years and a boy aged eleven, had general prurigo from no assignable cause; while a youth of nineteen attributed his prurigo to the use of a flannel shirt. There were six adults under thirty, four between thirty and forty, four between forty and fifty, two between fifty and sixty, three between sixty and seventy, two between seventy and eighty, one eighty-four, and one ninety years of age. There were fifteen cases of general prurigo, seven of prurigo of the vulva, three of the legs, and one case of prurigo of the scrotum. Prurigo of the vulva was caused, in six instances, either by cervical or vaginal leucorrhœa; while, in one instance, it was due to varicose veins of the vulva. General prurigo was traceable, in six instances, to chronic affections of the liver, and, in a few instances, to pediculi corporis.

LICHEN.

There were twenty-three cases of lichen; sixteen in females, and seven in males. Three of the males were infants aged respectively, fifteen, eighteen, and twenty-two months. The fourth male patient, according to age, was five and a half years old, the fifth eighteen, the sixth thirty, and the seventh thirty-three years. Among the females, five were under two years of age, four under five years, one was aged eight years, and six were adults. Eleven cases of lichen were seen in July, three in August, one in September, three in October, two in November, one in February, one in April, and one in May. The disease was much more common in children than in adults; and in females than in males. During July and August, it was of an acute character, and was evidently produced by the extremely hot weather and consequent profuse sweating. At this season of the year it was frequently accompanied by furunculosis. The lichenous eruption made its appearance on the face, neck, extremities, and occasionally over the body. Vesicles formed on some of the papules on the body in two young children. During the winter, the disease was much less frequent, and was provoked in every instance by the use of flannel or woollen underclothes. Two cases of lichen hæmorrhagicus occurred partly in consequence of the intense congestion or hyperæmia thus produced.

PSORIASIS.

Twenty-two patients were affected with psoriasis; eleven males and the same number of females. There

were ten cases of the variety known as psoriasis guttata; six of psoriasis inveterata; two of psoriasis palmaris; two of psoriasis palmaris et plantaris; and two cases in which the disease was general in its distribution over the surface of the body, and became confluent (psoriasis conferta). The palmar and plantar varieties of psoriasis were of syphilitic origin. There was a case of psoriasis inveterata of the knees and shins, in a girl five years old, in which the scales formed conical eminences which have been described as "psoriasis rupoides." Eighteen of the cases were in adults; and four in children. The number of cases between the ages of twenty and thirty was nine; between thirty and forty, four; between forty and fifty, two; and between fifty and sixty, one. The two remaining patients were aged respectively sixty-eight and seventy years. The disease was recurrent in many cases; and was worse in all of the cases during the winter and spring.

LUPUS.

Lupus occurred in twenty cases: ten males, and ten females. There were three cases in persons under twenty years of age, six between twenty and thirty, two between thirty and forty, three between forty and fifty, four between sixty and seventy, and two at seventy-seven years of age. Eleven times the nose was affected; eight times in females, and three times in males. The temple was the seat of the disease in two cases, the cheek in four, the back of the neck in one case, and the arm in one.

There were three cases of lupus erythematosus, one of which affected the cheeks and nose of a boy aged thirteen years, one the back of the neck of a girl aged seventeen, and one the nose of a woman aged twenty-nine. There were two cases of lupus exedens of the nose. The remaining fifteen cases of lupus were of the variety known as lupus non exedens. In eight out of the twenty cases of lupus the patients had a syphilitic history; while in seven of these cases the venereal disease occurred several years previous to the lupus. In one instance, there was hereditary syphilis with notched teeth described by Hutchinson. The nose was the seat of the disease in five out of the eight cases in which there was a previous history of syphilis. The duration of the lupus in different instances, at the time the patients first presented themselves for examination and treatment, had varied from six months to twenty years.

PITYRIASIS VERSICOLOR.

Pityriasis versicolor occurred fourteen times; ten times in females, and four in males. It occupied the chest in all of the cases; the neck and chest in four cases, the neck, chest, shoulders, and back, in four, and the neck, chest, abdomen, and hips in one case. The arms were affected in three of the cases. In these, the disease had been of two or three years duration. Three of the persons had chlorosis, two were in advanced phthisis, one had chronic bronchitis, one chronic rheumatism, one tubercular syphilis, and one was affected with general debility. The

cause of the disease is not stated in the record of the remaining five cases. Pityriasis versicolor is consequent upon unnatural dryness of the skin in many of these chronic diseases. This membrane is thus placed in a condition favorable to the growth of certain cryptogamic plants, such as the trichophyton, achorion, and microsporon. The last-named cryptogam is the cause of pityriasis versicolor.

FAVUS.

Fourteen cases of favus occurred in children; two of which were fifteen years old, three twelve, two eleven, one ten, two nine, two eight, one seven, and one four and a half years old. In all of these cases the favus-cups were quite numerous, perfect in shape, of their peculiar light yellow color, and from one to three lines in breadth. The disease occupied the scalp, either completely or about the vertex, and was accompanied by more or less alopecia. In one instance, it spread to the malar region, having found its nidus in a furfuraceous condition of the scalp and cheek. In another instance, the eyebrow only was covered by a mass of favus material, with well-marked cups at the margin. The disease appears to have formed in consequence of a furfuraceous condition of this part. Its duration when first seen had been only two weeks. The mass of favus material being broken up, was of a dry, powdery character; and the skin beneath presented a red appearance, in consequence of being deprived of its superficial epithelial layers. One case of favus of four or five

years' duration, was accompanied by herpes circinatus of the chin, of recent origin. A sister of this patient had favus of the scalp; and the mother had the so-called "eczema marginatum" of the anterior and sides of the right lower extremity. One case of favus of the scalp was accompanied by herpes iris on the neck which had been noticed about a week. The patient, a boy nine years old, was pale and delicate looking, had eczema tarsi, and lived in the same house and played with three children who were attending the Skin Department for the treatment of favus. As regards the contagious character of the disease, the following summary of the fourteen cases may be interesting. The first and second patients were brothers; the fourth, fifth and sixth, were a brother and two sisters; the seventh and eighth were sisters; and the ninth lived in the house with the fourth, fifth and sixth patients. The thirteenth and fourteenth patients were brother and sister, one of which, as has been previously mentioned, had herpes circinatus, while the mother had the so-called "eczema marginatum," or herpes circinatus. In cases three, ten, eleven and twelve, there was no evidence that the disease had spread to other persons. The disease had been of several years' duration in all four of these cases, except the one in which it had its seat on the eyebrow. All of the patients affected with favus were under miserable hygienic surroundings, and were poorly clad and nourished.

HYPERHIDROSIS.

Hyperhidrosis, or excessive sweating, either of the whole body or a part, was noticed in twelve cases: seven females, and five males. The females were aged respectively two years nearly, four and a half years, eight, fourteen, thirty-two, forty-eight, and fifty years. The males were aged twenty-five, thirty, thirty-two, thirty-nine and forty-five years. There were but two cases of severe universal sweating. The patients in these instances were men; one aged thirty-two, and the other thirty-nine years. Both were poor in health; and one of them, the elder of the two, had bronchitis. He had also a recurrent urticaria of the hands. The younger man had an eruption of furunculi on the shoulders and thighs, the exciting cause of which seemed to be the excessive functional activity of the sudoriferous glands of these parts. A man aged twenty-five had hyperhidrosis of the feet, and that modification of this affection known as bromhidrosis. Another man, aged thirty, had chronic hyperhidrosis of the feet, from which affection he had suffered more or less inconvenience since he was twelve years of age. The remaining male patient, aged about forty-five years, had hyperhidrosis of the lower extremities, of seven weeks' duration, in consequence of erythema œdematosum of the feet and legs which had existed somewhat longer.

The youngest female patient, a child aged twenty-one months, had hyperhidrosis of face and neck from

debility. This patient also had hidrosadenitis and strumous ophthalmia. A girl aged four and a half years had profuse sweating of the face from some unknown cause, and consequent lichen of this region. A debilitated girl, aged fourteen, had hyperhidrosis palmaris et plantaris, apparently due to nervous debility. She was spanæmic and had otorrhœa. For the latter disease she was sent to Dr. Green, the aurist of the Institution. A woman aged thirty-two had excessive sweating of both hands temporarily, through fear of pain from a slight surgical operation performed on one of her fingers. A woman aged forty-eight had hyperhidrosis frontalis et nasalis with large vesicles on the nose and forehead and a furunculus beside her nose. The disease occurred in the middle of June; and was probably due to excessive exertion, and the elevated temperature of the atmosphere at this season. Another female, aged fifty, had profuse sweating of the arms and a lichenous eruption of these parts.

URTICARIA.

Urticaria manifested itself in ten patients; seven of whom were females. Five of the cases were seen in April, two in March, one in January, one in September, and one in October. In six of the cases it assumed the form of U. evanida recurrens, or evanescent recurrent urticaria; in two, that of U. annulata perstans, or persistent annular urticaria; in one, U. evanida et tuberosa, or evanescent and tuberose urticaria; and in one case, a nursing child eleven months

URTICARIA ANNULATA.

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old, it appeared in the form of U. annulata perstans et U. bullosa, or persistent annular and bullous urticaria. The bullæ in this instance formed upon wheals similar to those of lichen urticatus. In nearly every case there were dyspeptic symptoms traceable to certain kinds of food to which the patient was unaccustomed, or which were taken at unusual seasons, or in improper quantities. In four of the cases, not directly traceable to errors of diet, all of which were observed in April, the successive eruption of wheals assumed a distinctly remittent character; in three of them, appearing late in the afternoon for several days in succession; and in one, in the forenoon. Oysters, cabbage, corned beef, and fresh haddock, were the chief articles of diet which acted as the immediate exciting causes of the above reflex phenomena in the sensibility and nutrition of the skin. Two of the females were forty-six years old; one, forty-four; one, forty; two, twenty-four; and one, ten; the age of the males was as follows: one, twenty-two; one, sixteen; and one, eleven months old. In some instances, previous to the commencement of treatment, there had been repeated attacks of urticaria every few days during a period of nearly three months.

ALOPECIA.

There were ten cases treated for alopecia, or loss of hair; five males, and five females. The ages of the males were five, ten, fourteen, fifteen, and forty-three years; while those of the females were seven, eighteen and one half, twenty-seven, thirty-two, and

thirty-seven years. In four cases, the alopecia was due to eczema; in one, to favus; in one, to syphilis; and in four to some alteration in the innervation of the scalp. In one of these cases the loss of hair appeared to be due to some reflex change of nutrition dependent upon the presence of the ascaris lumbricoides in the intestine. In the other cases, there was loss of the eyebrows and eyelashes, and also of the lanugo.

NÆVUS.

Nine cases of nævus were seen in the Department for the treatment of skin diseases among outpatients, most of which were sent to the surgeon to outpatients. Nævi are for the most part of congenital origin, and depend upon some imperfection of the blood-vessels of the skin. These hypertrophies sometimes remain stationary as regards their growth, or atrophy takes place in them; while, at other times, they suddenly acquire unusual dimensions, and in some situations are attended by fatal results in consequence of accidental hæmorrhage from their ruptured vessels. A few observations on these singular deformities of the skin may be of interest to students and dermatologists. There were seven cases of nævus arteriosus, one case of nævus arteriosus et venosus, or mixed nævus, and one of nævus hypertrophicus. Six of the patients were females, and three were males. An interesting feature of the disease is seen in its distribution.

Case I. Female, aged seventeen years. Nævus

arteriosus, congenital, right arm and hand, radial border to base of thumb-nail.

Case II. Female, aged twenty years. Nævus arteriosus, congenital, left side of face, patch in front of ear, one on the anastamoses of the buccal nerves, one below this on the anastamoses of the cervical and facial nerves, another patch on the chin, and one on the lower lip.

Case III. Male, aged sixty-three years. Nævus arteriosus et venosus, congenital, right arm and side of thorax to median line in front, and on back. No perceptible change has been noticed in the nævus since childhood. When the arm is pendent, the vessels of the nævus become filled with blood, so as to give it the character of an erectile tumor. As regards the origin of this congenital mark, the patient says his mother attributed it to fright from a mouse that ran up her arm during pregnancy.

Case IV. Male, aged twenty-eight years. Nævus arteriosus, right arm and thorax as far as median line. The patient had erythema pernio of nose.

The character and situation of the remaining nævi were as follows: nævus arteriosus on the middle of the forehead in one case, at the angle of the eye in one case, on the cheek in another, and in one instance the situation is not recorded. There was one case of nævus hypertrophicus on the forehead.

DERMOID CYSTS.

There were eight cases of dermoid, or sebaceous cysts; four in males, and four in females. One

patient was aged two years and two months; two patients were three and one half years each; while the ages of the others were respectively twelve, twenty-eight, thirty-nine, forty-one, and fifty years. In three instances, the neck was the seat of the disease; in four, the cheeks or ocular region; and in one instance the cyst was situated between the shoulders. None of these morbid growths were much larger than a good-sized pea, or a small chestnut.

IMPETIGO CONTAGIOSA.

This form of impetigo is only an advanced stage, or a modification of herpes iris. There were seven cases of impetigo contagiosa; six of which were in children, and one in an adult. The patients were all females except one. In every instance the eruption occupied the face. Five times it was situated on the chin; once on the side of the nose; and once there was a slight impetigo sparsa of the face.

HYPERÆSTHESIA CUTIS.

There were seven cases of hyperæsthesia, or increased sensibility of the skin. Five patients had general hyperæsthesia; while in two patients, females, only the left side was affected. Icterus, bronzing of the skin, asthenia, and a previous attack of scabies, were each the causes or concomitant symptoms of general hyperæsthesia, or exalted sensibility of the skin. In the remaining cases, nothing definite as regards the history or condition of the patient was obtained.

SEBORRHŒA.

There were seven cases of seborrhœa; four females, and three males. The ages of the patients were as follows: two months, two years, fourteen, fifteen, twenty, twenty-five, and fifty-five years. There were six cases of seborrhœa sicca, while there was only one case of seborrhœa oleosa. The face, scalp, chest and arms, were the only parts affected by this disease. The nose and cheeks were the principal seats of seborrhœa of the face.

PURPURA.

There were five patients affected with purpura; three males, and two females.

Case I. Female, aged eleven years. Purpura simplex, thighs and legs; most in afternoon and towards evening; patient is spanæmic.

Case II. Male, aged twenty-five years. Purpura hæmorrhagica, right leg and inner surface of thigh; slight swelling of leg towards night, gone in morning; epistaxis more or less during the past year, and frequently, of late, twice a day. The purpuric eruption has existed from six to eight months. The patient was admitted to the Hospital, as was also his father, for this disease.

Case III. Male, aged forty years. Purpura simplex of lower extremities.

Case IV. Female, aged forty-four years. Purpura hæmorrhagica. Pain in lower extremities and purpuric eruption on legs, appearing towards

night for the last eighteen months. During this time she has had attacks of uterine and pulmonary hæmorrhage. She was admitted into the hospital for further treatment.

Case V. Male, aged sixty-six years. Purpura simplex, eruption on legs. The patient has varicose veins of the lower extremities. The complications of purpura with other cutaneous affections will be noticed among the rare forms of skin disease, unless we should exceed the limits necessarily allotted to this paper.

BRONZED SKIN.

There were five patients affected with bronzing of the skin, three males and two females. The males were aged thirty-four years, forty-one, and fifty-six years; and the two females, thirty-five years each. Excessive pruritus from pediculi corporis was the apparent exciting cause of the bronzing in one case; prolonged sea-sickness in another; miscarriage between the third and fourth months of pregnancy, followed by frequent slight pulmonary hæmorrhages precede the bronzing in a third case; hyperæsthesia cutis and asthenia, preceded and accompanied the bronzing in the fourth case; while an injury to the back, from a fall down stairs, was shortly followed by marked and progressive asthenia and bronzing of the face, neck, arms, body, and the dorsum of the penis, in the case of the fifth patient. The further histories of some of these patients will be found in the records of the City Hospital to which they were subsequently admitted.

Disturbance of the ganglionic nervous system by shock to some of its dependencies, either of a direct or reflex character, was without doubt the exciting cause of the excessive production of piqurent in all of the above cases.

RARE FORMS OF SKIN DISEASES.

The remaining cases of skin-disease are of such a miscellaneous character as to afford but little interest in the matter of statistics. An enumeration of them, with a few remarks on some of their important features, is all that will be given here.

There were four cases each of the following diseases: ecthyma, pemphigus, pityriasis, and sycosis; three each of chloasma and roseola; two each of erysipelas, hypertrophy of the toe-nails, kelis, lentigo, leuco-melanopathia, and urticaria hæmorrhagica; and one each of anthrax, asperitudo cutis, canities, desquamatio cutis, elephantiasis, ephelis, hirsuties, intertrigo, leucopathia, lymphangoites cutis, urticaria bullosa, varicella, vesication, etc.

ECTHYMA.

Ecthyma is a rare affection of the skin, only four cases of it having been observed by us in a thousand. Ecthymatous-looking pustules may occur in chronic impetigo and scabies; but true ecthyma is a well-marked disease, and, as far as our observations extend, is of syphilitic origin. This disease is occasionally rapid in its progress, and in some instances hæmorrhage takes place in the vesico-pustules, or they are

affected with circumscribed gangrene. These varieties of ecthyma are represented by Willan in his plates, under the names respectively of "ecthyma luridum" and "ecthyma cachecticum." He says the latter form of ecthyma "is often treated as syphilitic." We sincerely believe that injustice has been done to the distinguished founder of English dermatology by those writers who have confounded his representations of this rare disease with the exaggerated condition of the pustules occasionally seen in chronic scabies.

PEMPHIGUS.

There were four cases of this rare form of skin disease. The ages of the patients were seven and a half, eight, thirteen, and fifteen. The youngest, a girl, had been affected eleven months when first she came under our own observation and treatment. The eruption in this case consisted of blebs or bullæ, varying in size from a pea to a chestnut, and, in some instances, attaining the diameter of an English walnut. The largest bullæ were situated on the thighs and legs, and the smallest on the back. Some of the bullæ contained more or less pus, while others were tinged with blood. They were therefore either translucent or yellowish, pink, or purple. There was excessive general pruritus whenever these bullæ were ruptured, and an eczematous condition of the back, neck, and scalp, which probably depended on, or was closely connected with, the bullous eruption. The next in age, a boy, had a few solitary blebs of pemphi-

gus on each of his lower extremities. The next still, a boy aged thirteen, had a discrete eruption of blebs subsequent to impetigo. The eldest patient, a girl aged fifteen years, had been affected with impetigo of the arms and legs for the last six years. Occasionally there was an eruption of blebs during a single night. This disease first appeared a few days after severe exposure to cold. We have recorded it as a case of pemphigus impetiginosus.

PITYRIASIS.

Pityriasis does not appear, from our own observations, to be entitled to the same independent position in the classification of skin diseases which it has hitherto occupied. Many dermatologists, following the example of Willan, have accorded to this affection a position among the squamous diseases of the skin. It will be hardly necessary to say, that the scale is but a secondary product in many chronic forms of cutaneous diseases, whether they originate in erythematous or eczematous conditions of this membrane. The pityriasis rubra described by Willan is in no way distinguishable, either by its clinical history or its general appearance, from certain stages of eczema; particularly those stages known as eczema rubrum, and eczema squamosum. Ordinary pityriasis generally betokens the approach of eczema; sometimes, however, it succeeds the latter disease. It would make the study of skin diseases much more simple than it now is, if such names as these were altogether abandoned; or else used to signify, as in

truth they do, only the stages of some well-known pathological process in the skin. In some instances it would be better if this furfuraceous condition of the skin were designated *eczema furfurans.* The only form of pityriasis that has a distinct existence is the phytodermic affection known as pityriasis versicolor.

SYCOSIS.

Sycosis is a somewhat rare affection of the bearded portions of the face, more especially the chin; and is not unfrequently consequent upon herpes tonsurans of these parts. Hebra describes sycosis as affecting not only the bearded portions of the face, but the scalp, eyebrows, nostrils, pubes, and axillæ. Great stress is laid by him on the following diagnostic signs of this disease: "Its seat, its limitation to male patients in whom the beard is developed, and its characteristic papules, tubercles, and pustules, *with hair running through them.*" Although we cheerfully concur in the truth of these statements, we confess our inability to see how a papule, tubercle, or pustule of any considerable dimensions, could exist in any of the above named regions without being perforated by one or more hairs. Nevertheless, we agree that in sycosis, the hair-follicles are evidently the seat of inflammation of a chronic character, with suppuration, and occasional hypertrophy. Not unfrequently do these conditions depend upon external irritation. The four cases of sycosis observed by us were in males, aged twenty-one, twenty-two, twenty-

seven, and forty-three years. In the first case, the upper lip only was affected; and the patient attributed his disease to the habit of being shaved by a barber. In the second case, the disease extended from the side of the face to the shaven portion of the neck, in the form of sycosis parasitica, or herpes tonsurans of the beard. The third patient had impetigo sycosiformis of the chin and neck, of one week's duration. He was shaved previously by a barber. The last patient of all had sycosis menti, eight or ten weeks after herpes circinatus et tonsurans of the face.

ROSEOLA.

Roseola is a rare affection, and might be mistaken for erythema annulare or erythena iris by those not well acquainted with the diseases. It differs from them in its duration, and in the slight elevation of the blotches above the surrounding skin. It is to be distinguished from urticaria annulata, which is also rare, by the slight amount of itching and the short duration of the disease. Urticaria annulata, moreover, is somewhat chronic in its course, and not unfrequently assumes a serpiginous character, by the extension of the annular wheals until they coalesce at the nearest points of their circumference, as in psoriasis gyrata. The first case of roseola occurred in the month of April, in a boy aged five years. The eruption appeared on a Saturday evening, was quite general, and remained until the next Monday evening. The face and hands were somewhat swollen, but there was

hardly any itching. The next case of roseola occurred in June, in a man aged twenty-seven, and was ushered in by coryza and febrile symptoms. The rash first appeared on the arms, but became quite general on the second day. The patient had constipation, anorexia, a thin white fur upon the tongue, and the throat was slightly sore, and the lips swollen. Some of the blotches of roseola were more elevated than the rest, and in this respect resembled the wheals of urticaria; but they did not itch.

The remaining case was one of roseola annulata, and occurred about the last of May, ina female aged thirty-five, and who had been subject to rheumatic pains in her ankles for the previous six weeks, together with some swelling of these parts. The eruption was upon the back of the arm, and consisted of rose-colored rings of from three to eight lines in diameter, and without any perceptible elevation, and unaccompanied by itching. This cutaneous efflorescence was probably a roseola rheumatica.

HIRSUTIES.

One case only of hirsuties, or overgrowth of hair, or lanugo, came under our observation. It was chiefly remarkable for its circumscribed character, in this respect resembling nævus pilosus, and for the unusual position of the growth. Nothing definite was ascertained in regard to its duration; if congenital, it must be considered as a rather remarkable specimen of nævus pilosus. The following description is from the author's monograph on "structural lesions of the

skin": "The subject of this local overgrowth of hair was a man, forty-five years of age; and the color and texture of the skin, in the hirsute region, were perfectly normal. The hair grew from an oval patch, situated immediately below the right scapula, and measuring three and a half inches in the long axis, by three in the short one, and was about as coarse as that of the head, above two inches in length, and inserted obliquely, so that the direction of its free extremities was downwards, and towards the spine."

LEUCOPATHIA.

The patient, a girl eleven years old, had slight paralysis of left side when a child. This side has always been "lame," to use the expression of an elder sister who came with the patient, from this cause. Six months ago, blanching of the skin and eyelashes of the left ocular region was first noticed. At present, this condition is well marked; the abnormal whiteness occupying the supra-orbital region and a portion of the skin supplied by the tri-facial nerve. There is a patch of whiteness in front of the left ear, and one on the left cheek. The outer half of both eyelashes is milk-white, while the remaining portions of the same side are of their natural dark color. The texture of the skin is not perceptibly changed. Several months afterwards, there was a marked alteration in the condition of these parts, the skin having in a great measure regained its normal color, and the eyelashes not being quite so milk-white as they were when first observed. The sensibility of the skin of

the affected region was carefully tested, when the patient was first examined, but it was not found to be perceptibly impaired.

URTICARIA BULLOSA.

This disease is a variety of lichen urticatus, in which exudation takes place in the summits of the wheals, giving rise to bullæ. These little collections of serum resemble those of pemphigus, and also one of the forms of herpes iris. The presence of wheals on other parts of the skin, and in those situations where bullæ are subsequently formed, remove any doubt there may be as regards diagnosis. Both the wheals and bullæ are seen on the backs of the arms, on the legs, and on the face. Sometimes a few bullæ are seen on the inner aspect of the forearms. Urticaria bullosa became more frequent this year as the season advanced. Several cases were observed by us during the summer months.

URTICARIA HÆMORRHAGICA.

Two cases of this rare variety of urticaria were observed. In both instances there were successive eruptions of wheals, of a circular, or oval form. Serous exudation took place in the form of bullæ, in many of these wheals. In some of these bullæ there was extravasation of blood from the denuded papillæ of the derma. This variety of skin disease is unlike the purpura urticans of Willan. It is merely a lichen urticatus, in which bullæ or water-blisters are formed; and into the interiors of some of which there is usu-

ally only a slight hæmorrhage, consequent on the rupture, either spontaneously or from scratching, of some of the minute arteries of the cutaneous papillæ, at the bottom of these blebs.

HÆMATIDROSIS.

Case I. — Charles G——, aged thirty-five years, came under my treatment for herpes tonsurans of the bearded portion of the face; while at the same time he consulted me in regard to another affection which had troubled him at times for the last fifteen years. According to his statement, he had been subject, during this period, to profuse perspiration of the feet, or hyperhidrosis. The odor of these parts became sensibly increased in a few hours after they had been thoroughly washed. Sometimes it became so offensive as to fill a room in a few minutes, especially at night, after much standing during the day. During the summer, the perspiration is often increased, and sometimes becomes tinged with blood, so as to leave stains on the stockings. The blood seems to come out of the ends of the toes, mixed with the sweat. The toes feel painful at such times, and are very tender to the touch.

ARTICLE VII.

TYPHOID AND TYPHUS FEVER.

BY J. BAXTER UPHAM.

The following tables present, in condensed form, the history of all the undoubted cases of typhoid and typhus fever which have been treated in the Hospital, during the first five years from its foundation. They are arranged to exhibit in order the following particulars: —

1st. The number of the case, in the chronological order of its admission to the Hospital.

2d. The name, sex, nationality and occupation of the patient, and a reference to the volume and page in the hospital record where it may be found.

3d. The patient's age.

4th. The date of admission to Hospital.

5th. The period of the disease at which the patient was admitted.

6th. The duration of the disease up to the time of convalescence, or death.

7th. The result.

8th. The early and later symptoms.

9th. The treatment.

10th. The name of the physician to whose care the patient was committed.

11th. General remarks upon the case.

In the preparation of these tabular sketches, I am greatly indebted to the intelligent and willing assist-

ance of Dr. O. W. Doe, formerly one of the House Officers of the Hospital, whose labor in originally collecting the notes from the clinical records is hereby gratefully acknowledged. I have myself carefully reviewed and revised the tables, inspecting each and every case and comparing it with the hospital books, so that I can personally vouch for the accuracy of their details as far as they go. I have endeavored to cull from my more extended notes the essential and salient points in each case in so far as the materials at hand would permit, — to give, in briefest phrase, the history of the patient while in Hospital, in such manner as to afford an adequate portraiture of the disease, and at the same time not too much encumber the page.

I have thrown out from the series such cases as from the insufficiency of the original records could not be fully identified as belonging to the fevers of either classs. It is to be regretted that in the fatal cases so few post mortem examinations could be obtained, — a defect which materially detracts from the value of the tables as a whole. Nor is the aggregate of cases here presented sufficiently large or the details sufficiently minute to base upon them any positive and infallible conclusions. I can only regard them as waifs thrown upon the shore of the vast multitude of facts and phenomena, now being so carefully and intelligently collected in this and in other countries, upon which we hope to ground at length some rational and definite understanding of these two diseases, or forms of disease, conventionally known as typhoid and typhus fever.

TABULAR HISTORY OF 152 CASES OF TYPHOID

No. of Case.	Name & Occupation. Vol. and page of Record.	Age.	When admitted.	Days ill before entrance.	Duration till convalescence or death.	Result.	SYMPTOMS. Early.
1	E. M., Irish seamstress. Vol. 1, page 45.	Yrs 18	1864. Aug. 19.	14	34 days.	Well.	Diarrhœa, lassitude, vertigo, epistaxis, headache, dizziness, pain in bowels, pyrexia.
2	B. M., Irish servant woman. Vol. 1, page 69.	44	Sept. 17.	8	28 days.	Well.	Chills, followed by heat, headache, general muscular pains, epistaxis, anorexia, constipation.
3	C. C., Irish servant girl. Vol. 1, page 73.	18	Sept. 24.	14	30 days.	Well.	Chills, followed by heat, headache, vertigo, vomiting, diarrhœa, anorexia.
4	B. M., Irish servant girl. Vol. 1, page 89.	17	Oct. 17.	14	31 days.	Well.	Constant headache, epistaxis, general muscular pains, anorexia, &c.
5	A. S., Nova Scotian, dress maker. Vol. 1, page 107.	21	Nov. 3.	7	34. days.	Well.	Chills, headache, loss of strength and appetite. General malaise.
6	B. K., Irish servant girl. Vol. 1, page 111.	24	Nov. 8.	6	31 days.	Well.	Chills, feverishness, headache, vertigo, loss of strength and appetite, constipation.
7	J. R., Irish laborer. Vol. 1, page 47.	37	Aug. 30.	8	24 days.	Well.	Chills, feverishness, profuse diaphoresis, loss of strength and appetite, pain in head and back.
8	D. C., Irish laborer. Vol. 1, page 55.	19	Sept. 12.	9	32 days.	Well.	Chills, followed by heat, severe headache, anorexia, general muscular pains, vertigo, constipation.
9	J. F., Irish porter. Vol. 1, page 67.	42	Oct. 4.	21	25 days.	Well.	Chills, followed by heat, vertigo, headache, loss of strength and flesh. Pain in chest.
10	I. H., Irish wire roller. Vol. 1, page 69.	20	Oct. 4.	. .	34 days.	Well.	Headache, nausea, slightly coated tongue, scanty and high colored urine, accelerated pulse.

SYMPTOMS. Advanced.	Treatment.	Name of Physician.	Remarks.
Apathetic face, increased respiration, loaded tongue, diarrhœa, tympanites, tenderness in iliac region, delirium, rose spots general over chest and abdomen, noted Aug. 24th.	Fever mixture, tr. opii, wine whey. chicken broth, tea and cream.	Dr. Oliver.	Highest pulse rate 123. Complicated with pneumonia and parotitis. Tedious convalescence.
Severe headache, insomnia loaded tongue, pain in bowels, tympanites, tenderness in right iliac fossa.	Fever mixture, sponge bath at night, mercurial cathartics, quinine during convalescence.	Oliver.	Previous health good. Pulse 64 at entrance and at no time higher than 86. No eruption at any time.
Hot and dry skin, loaded tongue, increased respiration, cough with expectoration, vomiting, pain in right iliac region, tympanites, constipation, delirium.	Fever mixture, Dover's powders, mercurial cathartics, warm fomentations over bowels, flax-seed tea, milk diet.	Oliver.	Previous health good. Highest rate of pulse 128. Respiration 52. No rose spots noticed. Pneumonia present at time of entrance, which involved lower lobe of right lung.
Severe pain in head and back, dry and hot skin, whitish tongue, dry cough, tenderness and pain over abdomen, tympanites, constipation. Occasional rose spot noticed on abdomen, at entrance.	Fever mixture, sponge bath, hyoscyamus and camphor, milk diet.	Oliver.	Previous health good. Patient came from Ireland six weeks before entering hospital; had not felt well since arrival; catamenia had never appeared.
Headache, hot and dry skin, loaded tongue, slight insomnia, tenderness in right iliac region.	Fever mixture, . milk and broths, quinine.	Oliver and Borland.	Previous health delicate, cerebro-spinal meningitis fully developed itself four weeks after entrance and constituted the chief disease. Convalescence prolonged and tedious.
Flushed face, loaded tongue, headache, insomnia, vomiting, tenderness over abdomen, tympanites, constipation, rose spots in abundance on abdomen, noted Nov. 11.	Fever mixture, sponge baths, mild cathartics, milk diet.	Oliver and Borland.	Patient had nearly recovered from typhoid condition when cerebro-spinal meningitis supervened. She was discharged well 3½ months after entrance.
Flushed face, furred tongue, sleeplessness, constipation, rose spots on abdomen.	Warm baths, castor oil, broths, milk diet, tr. columbo during convalescence.	Oliver.	Previous health good. Mild case.
Flushed face, severe headache, thirst, hot and dry skin, slightly coated tongue, tympanites, tenderness over right iliac region, constipation, rose spots on abdomen and chest, noted Sep. 16.	Sponge baths, sodae sulph. ʒi—3 t. d., milk and broths carefully increased. Tr. columbo during convalescence.	Oliver.	Patient came to this country seven months previously and had since worked hard and lived poorly. Disease commenced after exposure to wet and cold.
Cough, with frothy sputa, pain in limbs, crepitus at apex of left lung. Rose spots on abdomen.	Sinapisms to chest, fever mixture, tr. gent. co., bis. subnit.	Oliver.	Previous health generally good. Case complicated with pneumonia, which involved apex of left lung. Pulse 72 at entrance.
Tenderness of abdomen, especially in right iliac region. Tympanites, rose spots appeared on the 10th day.	Rest, milk diet.	Oliver.	Previous health good. Disease developed itself six weeks after entrance; supervened on Acute Rheumatism. Highest pulse rate 126.

(*Continued.*)

No. of Case.	Name and Occupation. Vol. and page of Record.	Age.	When admitted.	Days ill before entrance.	Duration till convalescence or death.	Result.	SYMPTOMS. Early.
11	Wm. C., American teamster. Vol. 2, page 45.	21	1864. Aug. 22.	21.	38 days.	Well.	Vertigo, general malaise, cough, languor, restlessness.
12	M. C., Irish servant girl. Vol. 1, page 169.	24	1865. Jan. 9.	21.	34 days.	Well.	Chills followed by heat and sweating, headache, vertigo, pain in bones, sense of fatigue, loss of appetite and strength, epistaxis, constipation.
13	A. L., Irish servant girl. Vol. 1, page 217.	18	Feb. 18.	21.	43 days.	Well.	Chills, headache, vertigo, sense of exhaustion, anorexia, constipation.
14	M. D., Irish servant girl. Vol. 1, page 227.	20	Feb. 24.	28.	43 days.	Well.	Chills followed by heat, dull headache, pain in back and limbs, vertigo, loss of appetite, constipation.
15	F. D., Irish man servant. Vol. 1, page 193.	Not stated.	May 4.	28.	44 days.	Well.	Headache, cough with expectoration, loss of appetite, muscular pains, general malaise.
16	J. O., American teamster. Vol. 1, page 254.	32	July 31.	14.	36 days.	Well.	Chills, feeling of lassitude, &c.
17	J. C., Irish soldier. Vol. 1, page 273.	24	Aug. 15.	4.	30 days.	Well.	Restlessness, vomiting, pyrexia, loss of appetite, thirst, headache.
18	J. K., Irish laborer. Vol. 2, page 196.	43	May 23.	14.	29 days.	Well.	Lassitude, headache, anorexia, delirium.
19	F. K., American boy. Vol. 2, page 200.	11	June 2.	7.	21 days.	Well.	Headache, pain in epigastrium, nausea, cough and expectoration.
20	A. R., Nova Scotian medical student. Vol. 2, page 214.	20	June 19.	Not stated.	23 days in hospital.	Well.	Not stated.

(*Continued.*)

SYMPTOMS. Advanced.	Treatment.	Name of Physician.	Remarks.
Epistaxis, deafness, glossy and dry tongue, increased respiration, cough, insomnia, delirium, constipation, sudamina, rose spots on abdomen.	Fever mixture, warm pediluvia at night, ext. col. comp., milk and broths carefully increased, quinine during convalescence.	Homans.	Previous health fair. Pulse 96 at entrance. Some bronchial irritation during course of fever.
Flushed face, hurried respiration, heavy white coat on tongue, diarrhœa, restlessness, tympanites, tenderness in right iliac region, constipation. Rose spots on chest and abdomen.	Fever mixture. Dover's powders, simple enemata, mild laxatives, wine whey, broths for first two weeks. Tr. ferri chlor. during last two weeks.	Borland.	Previous health generally good. Bowels constipated throughout the case. Highest pulse 124 at entrance.
Flushed face, hot but moist skin, furred tongue, tympanites, tenderness of abdomen. Rose spots on abdomen at entrance, constipation.	Fever mixture. Dover's powders at night. Rochelle powders, enemata, sponge baths, milk and beef tea.	Borland.	Previous health good. Patient continued to work until a week before entrance, was retained in hospital two months after recovery from fever for hysteria. Highest pulse rate 96.
Headache, flushed face, hot and moist skin, whitish tongue, slight cough, tenderness of abdomen, tympanites, constipation. Rose spots at entrance.	Sulphate of magnesia, fever mixture, enemata. Tr. hyoscyamus, cit. of iron and quinine during convalescence.	Borland.	Previous health generally good.
Great exhaustion, cough, tenderness in right iliac region, constipation, rose spots on abdomen.	Fever mixture, mild cathartics, sherry wine.	Morland.	Previous health delicate. Mild case; bronchitis predominating.
Slightly coated tongue, wakefulness, sense of exhaustion, loss of appetite, high colored urine, some tenderness and tympanites. Rose spots on abdomen noted Aug. 2d.	Fever mixture, sponge baths, milk and broths, quinine during convalescence.	Oliver.	Previous health generally good, complicated with incipient phthisis.
Vertigo, chills, vomiting, constipation, a few rose spots noted Aug. 28th.	Castor oil, fever mixture, morphia, p. r. n.	Oliver.	Previous health good, with exception of remittent fever contracted in the South. Patient had been in the army four years. Disease supervened after a debauch. Pulse 108 at entrance.
Moist and slightly coated tongue, headache, pain in bowels, exhaustion, constipation, slight tenderness of abdomen. Rose spots on chest and abdomen at entrance.	Fever mixture. Dover's powders, mild cathartics, infusion of columbo during convalescence.	Blake.	Previous health good. Highest pulse rate 84.
Hot skin, whitish and pasty tongue, tympanites, tenderness of abdomen, sudamina over abdomen.	Fever mixture, wine whey, milk and broths.	Blake.	Previous health good. Mild case, complicated with slight attack of pneumonia.
Flushed face, heavily loaded tongue, delirium, tympanites, gurgling in right iliac fossa, tenderness of abdomen, constipation, papular eruption over abdomen, thorax, and other parts of the body.	Mild cathartics, fever mixture, Dover's powders, tinct. of hyoscyamus, Hoffman's anodyne, morphia, port wine, milk, and beef tea.	Reynolds.	Patient had overtasked himself, been irregular in hours for food and sleep; delirious at entrance, and for 11 days afterwards. No true rose spots could be discovered, but a papular eruption scattered over the whole body which the patient said he always had in health.

(*Continued.*)

No. of Case.	Name and Occupation. Vol. and page of Record.	Age.	When admitted.	Days ill before entrance.	Duration till convalescence or death.	Result.	SYMPTOMS. Early.
21	A. F. L., Swede, blacksmith. Vol. 2, page 262.	25	1865. Aug. 8.	49	68 days.	Well.	Headache, pyrexia, pain at epigastrium, sense of exhaustion, loss of appetite and sleep, some tendency to diarrhœa, general malaise.
22	Z. O., American, widow. Vol. 3, page 5.	28	Apr. 11.	Not stated.	5 days in Hospital.	Dead.	Not stated.
23	E. H., American laborer. Vol. 3, page 194.	25	Sept. 7.	14	34 days.	Well.	Loss of appetite, headache, vertigo, nausea, anorexia, chills.
24	I. G., Irish servant girl. Vol. 3, page 216.	26	Sep. 16.	7	21 days.	Well.	Chills, sense of languor and weakness, pain in back and limbs, general malaise.
25	B. H., Irish housekeeper. Vol. 3, page 226.	24	Sept. 23.	7	14 days.	Well.	Loss of appetite, epistaxis, headache, vertigo, pain in limbs and back.
26	W. F., Irish boy. Vol. 3, page 244.	15	Oct. 6.	Not stated.	32 days in Hospital.	Well.	Not stated.
27	P. L., New Brunswick carpenter. Vol. 5, page 13.	35	Oct. 28.	10	33 days.	Well.	Headache, pain in back, ringing in the ears, loss of appetite, malaise, diarrhœa.
28	T. B., American seaman. Vol. 5, page 47.	30	Nov. 15.	12	20 days.	Well.	Chills, anorexia, lassitude.
29	S. M., female. Occupation not stated. Vol. 5, page 53.	23	Nov. 20.	Not stated.	5 days in Hospital.	Dead.	Not stated.
30	J. J. Swede machinist. Vol. 5, page 56.	26	Nov. 20.	8	24 days.	Well.	Headache, vertigo, lassitude.
31	J. F., Irish carpenter. Vol. 5, page 71.	20	Nov. 27.	9	40 days.	Well.	Chills, followed by heat, headache, cough with rusty expectoration, diarrhœa.

(*Continued.*)

SYMPTOMS. Advanced.	Treatment.	Name of Physician.	Remarks.
Epistaxis, vertigo, constipation alternating with diarrhœa, delirium.	Fever mixture, simple enemata, Dover's powders, mild cathartics, whiskey.	Dr. Reynolds.	Previous health good. Pulse at entrance 120.
Marked tenderness of abdomen, tympanites, involuntary dejections, delirium, subsultus tendinum. Rose spots on abdomen at entrance.	Turpentine stupes, sponge bath, Hoffman's anodyne, carbonate of ammonia, stimulants.	Morland.	Patient delirious at time of entrance, with a pulse of 118, which increased to 160 before death. Post mortem not obtained.
Epistaxis, accelerated respiration, slightly coated tongue, tympanites, gurgling in right iliac, mild delirium, rose spots on abdomen noted Sept. 8th.	Fever mixture, extract of hyoscyamus and camphor, whiskey ʒ ss every three hours, milk and beef tea.	Oliver.	Previous health poor. Hygienic surroundings of the patient at home bad. Highest pulse rate 96.
Hot skin, moist, moderately coated tongue, slight tremors about the mouth, wakefulness, restlessness, tenderness in both iliac regions, regular bowels.	Fever mixture, hyoscyamus and camphor, sponge bath at night, flaxseed tea.	Oliver.	Previous health good — a mild case.
Nausea, vomiting, sleeplessness, persistent headache, slightly coated tongue, pain and tenderness in abdomen.	Fever mixture, sponge bath with hyoscyamus and camphor aa grs. ij at night.	Oliver.	Previous health good. Very mild case.
Flushed face, deafness, dry skin, slight cough, moderately coated tongue, diarrhœa, tenderness in right iliac, rose spots on abdomen at entrance.	Fever mixture, milk and broths.	Oliver.	Pulse 96 at entrance. Patient confused and unable to give intelligible answers to questions.
Hot and moist skin, much thirst, dry cough, restlessness, tendency to diarrhœa, tenderness in right iliac, scanty eruption of rose spots.	Castor oil, fever mixture, flaxseed tea, milk diet.	Oliver.	Previous health generally good. Pulse 96 at entrance. Disease supervened after sleeping in a cold room.
Dry cough, light, brownish coat on tongue, loss of appetite and strength, diaphoresis, constipation.	Fever mixture, sponge bath, ext. hyoscyamus and oxide of zinc, tinct. ferri chlor.	Oliver.	Pulse 100 at entrance. Very mild case.
Dry and brown tongue, sordes on teeth, muscular twitching of face, tenderness over abdomen, dilated pupils, delirium, subsultus tendinum.	Brandy, beef tea, morphia p. r. n.	Oliver.	Patient was delirious at time of entrance, with pulse of 144; pulse 152 day before death.
Persistent headache, hot and moist skin, great thirst, slight cough, brownish coat on tongue, insomnia, scanty exhibition of rose spots noted Nov. 21st.	Ext. of hyoscyamus and camphor aa grs ij at night; milk and broths, tinct. cinch. ferri.	Oliver and Borland.	Previous health good. Pulse 80 at entrance.
Flushed face, brownish dry coat on tongue, thirst, mild delirium, sordes on teeth and lips, diarrhœa, tenderness and tympanites, abundant eruption of rose spots on chest and abdomen noted Dec. 2d, sudamina.	Fever mixture, lemonade, sponge bath at night, wine whey, milk and beef tea, mild astringents, fomentations on abdomen, citrate of iron and quinine during convalescence.	Oliver and Borland.	Previous health generally good. Pulse 100. Respiration 36 at entrance. Highest temperature 103-5; convalescence greatly prolonged by complication with pneumonia, involving lower half of both backs.

(*Continued.*)

No. of case.	Name and Occupation. Vol. and page of record.	Age.	When admitted.	Days ill before entrance.	Duration till convalescence or death.	Result.	SYMPTOMS. Early.
			1865.				
32	D. N., American errand boy. Vol. 6, page 146.	16	Dec. 25.	11	100 days.	Death.	Chills, followed by heat, general muscular pains, malaise, tinnitus aurium, slight delirium.
33	J. B., American teamster. Vol. 6, page 4.	23	Sept.20.	21	39 days.	Death.	Headache, insomnia, "pain in bones," epistaxis, anorexia, lassitude.
34	H. B., American seamstress. Vol. 6, page 58.	21	Oct. 14.	10	55 days.	Well.	Chills, epistaxis, headache, tinnitus aurium, anorexia, nausea.
35	P. D., Irish shoemaker. Vol. 6, page 74.	16	Oct. 24.	7	24 days.	Well.	Chills, fugitive pains, lassitude, headache, anorexia, epistaxis, vomiting, diarrhœa, pain in bowels, back and feet, insomnia with delirium.
36	M. C., Irish servant girl. Vol. 6, page 74.	21	Nov. 9.	13	59 days.	Well.	Headache, epistaxis, slight cough, pain in limbs, anorexia, malaise, abdominal disturbance.
37	C. C., Irish hostler. Vol. 6, page 202.	21	Dec. 1.	7	28 days.	Well.	Headache, malaise, cough, diarrhœa, pain in back and limbs, vomiting.
38	J. McD., American errand boy. Vol. 6, page 270.	16	Dec. 15	14	48 days.	Well.	Headache, epistaxis, deafness, tinnitus aurium, pain at epigastrium, malaise.

(*Continued.*)

SYMPTOMS. Advanced.	Treatment.	Name of Physician.	Remarks.
Flushed face, anxious look, dry and yellow coat on tongue, sordes on teeth, accelerated and compressible pulse, restlessness, tympanites, tenderness over abdomen, rose spots on abdomen and chest on the 26th, delirium, sudamina over abdomen, large bed-sores, tendency to sloughing wherever there was pressure.	Morphine, p. r. n., diluted mur. acid, quinine for 10 days, then iron and cod liver oil substituted, whiskey, sherry wine, beef tea.	Dr. Borland.	Previous health poor. Pulse at entrance 120. When disease terminated, legs were greatly œdematous, whole body covered with bed sores, left hip dislocated, and patient extremely emaciated. Scrofulous diathesis. Death from exhaustion. Post mortem not permitted.
Dry and fissured tongue, sordes, hot skin, diarrhœa, insomnia, wild delirium, subsultus, rose spots on abdomen at entrance, involuntary and bloody dejections.	Fever mixture, Dover's powders, enema of starch and opium, milk, beef tea.	Reynolds.	Previous health good. Pulse at entrance 96. No abdominal symptoms other than diarrhœa, gradual progression of disease. Post mortem not obtained.
Tinitus aurium, warm and moist skin, parched tongue, slight sordes, restlessness, diarrhœa alternating with constipation, some cough with moist râles, nervous agitation, slight pain and tenderness of abdomen.	Fever mixture, Dover's powder at night, simple enemata, aperients, cod liver oil, ale, whiskey, milk, quinine.	Reynolds.	Previous health good. Pulse remained about 84 throughout case. Complicated with hysteria.
Hot and moist skin, moderately coated tongue, cough and expectoration, dry râles throughout chest, disturbed sleep, delirium, some diarrhœa, and tenderness over lower part of abdomen.	Fever mixture, demulcents, beef tea, milk diet.	Reynolds.	Previous health good. Pulse 108 at entrance. Highest respiration 48. Complicated with bronchitis. Patient resided in a dry and healthy locality.
Flushed face, tongue coated in centre, dry skin, cough, sonorous râles, tendency to diarrhœa, abdomen full and resonant, occasional pain in iliac regions, delirium, nervous agitation.	Fever mixture, Dover's powder, morphine p. r. n., demulcents, opiate enemata, whiskey, brandy, quinine, beef tea, food carefully increased.	Reynolds and Upham.	Previous health generally good. Pulse at entrance 104. Complicated with bronchitis and suppuration of parotid and cervical glands, which greatly retarded convalescence.
Flushed face, apathetic look, headache, pain in back, sense of exhaustion, dry and cracked tongue, hot and dry skin with occasional diaphoresis, slight cough, gurgling in iliac fossæ, disturbed sleep, tympanites, pain in abdomen, rose spots on abdomen noted on 10th, constipation.	Fever mixture, Dover's powder, brandy, broths, milk diet, quinine.	Reynolds and Upham.	Previous health good. Place of residence dry and healthy. Pulse 120 at entrance; rheumatism in subacute form developed itself 3 weeks after entrance.
Epistaxis, apathetic look, exhaustion, hot and dry skin, loaded tongue, slight cough, dry râles, restlessness, delirium at night, some nervous agitation and subsultus, tympanites, gurgling in right iliac, rose spots noted at entrance, sudamina, constipation.	Fever mixture, Dover's powder, castor oil, enemata, turpentine stupes, ice to head, milk diet, chicken broth.	Upham.	Previous health good. Pulse 104 at entrance. Highest temperature 105.

(Continued.)

No. of Case.	Name and Occupation. Vol. and page of Record.	Age.	When admitted.	Days ill before entrance.	Duration till convalescence or death.	Result.	SYMPTOMS. Early.
39	A. M., Nova Scotia blacksmith. Vol. 8, page 22.	19	Dec. 28.	5	26 days.	Well.	Chills followed by heat, vomiting, stiffness and soreness of muscles.
40	W. K., American errand boy. Vol. 7, page 22.	12	1866. Apr. 5.	12	22 days.	Well.	General malaise, slight cough, headache, abdominal pains, sleeplessness, constipation.
41	D. R., Irish laborer. Vol. 7, page 182.	25	Apr. 14.	8	30 days.	Dead.	Chills, followed by fever, cough, diarrhœa, insomnia.
42	C. B., Nova Scotia female nurse. Vol. 7, page 192.	25	Apr. 23.	42	56 days.	Well.	Not stated.
43	F. B., German seaman. Vol. 8, page 64.	20	1866. Jan. 9.	2	31 days.	Well.	Chills, followed by heat, headache, pain in bowels, epistaxis, constipation.
44	—. C., female. Occupation not stated, Vol. 9, page 14.	Not stated.	May 24.	21	24 days.	Dead.	Not stated.
45	A. B., child. Vol. 9, page 18.	Not stated.	May 25.	14	20 days.	Well.	Not stated.
46	Q. R., American shop girl. Vol. 9, page 23.	17	May 26.	14	22 days.	Well.	Headache, pain in back, general malaise, vomiting, constipation.
47	S. C., Scottish tailor. Vol. 9, page 97.	17	July 2.	8	18 days.	Well.	General malaise, chills followed by heat, headache, anorexia, diarrhœa.

(Continued.)

SYMPTOMS. Advanced.	Treatment.	Name of Physician.	Remarks.
Stupid and apathetic look, headache, tongue heavily loaded with a creamy coat, soreness in muscles of neck and back, suffused eyes, somnolence, gurgling in iliac fossae, rose spots on abdomen noted January 4, constipation.	Fever mixture, Dover's powder, mild cathartics, foot bath, milk diet.	Dr. Upham.	Previous health good. Attacked after exposure.
Dry and brown tongue, tendency to delirium, intermittent pulse, slight gurgling in right iliac, constipation, rose spots on chest and abdomen noticed at entrance.	Castor oil, Dover's powder, flaxseed tea, sherry wine, brandy, broths, quinine during convalescence.	Morland.	Previous health good. Pulse 92 at entrance; in three days it fell to 68, and was intermitting; but became regular under the use of stimulants.
Cough, with frothy sputa, dry and loaded tongue, insomnia, diarrhœa with occasionally bloody discharges, slight tenderness below umbilicus, tympanites, sordes, delirium.	Sweet spirits of nitre, flaxseed tea, opium, astringents, wine, whiskey, carbonate of ammonia, brandy.	Morland.	Previous health good. Patient arrived from Ireland three weeks previously, reports a little sickness on board ship, fared poorly on the passage. Pulse 170 day before death.*
Hot and dry skin, disturbed sleep, tongue furred in centre, deafness, tinnitus aurium, headache, constipation, pain in abdomen, tenderness in right iliac fossae.	Castor oil, fever mixture, Dover's powder, sponge bath, sweet spirits of nitre, wine and broths. Citrate of iron and quinine during convalescence.	Morland.	Previous health feeble. Illness supervened after watching five consecutive nights with a typhoid fever patient.
Apathetic face, dry and hot skin, slight cough, hurried respiration, tongue loaded in centre, disturbed sleep, tympanites, pain in right iliac, gurgling, diarrhœa and constipation alternately, rose spots noted Jan. 14.	Dover's powder, fever mixture, castor oil, milk diet.	Upham.	Previous health generally good. Patient was fully convalescent February 21, when he went out and indulged in liquor, and came back with relapse of fever.
Confused intellect, hot skin, dry and brown tongue, teeth loaded with sordes, great tenderness over abdomen, rose spots on chest and abdomen at entrance.	Sponge baths, warm water enemata, beef tea, wine ad libitum.	Morland.	The patient was nearly in moribund condition at time of entrance, but lingered for three days. Post mortem not obtained.
Hot and dry skin, loaded tongue, sordes on teeth, restlessness, stupor, constipation, rose spots on chest at entrance.	Enemata, sweet spirits of nitre, sponge bath, wine and beef tea.	Morland.	Patient was in a state of stupor at time of entrance, pulse 124. A rapid improvement followed.
Headache, cough, whitish coat on tongue, tenderness in right iliac, rose spots on chest noted May 28, constipation.	Fever mixture, sherry wine, milk, beef tea, quinine.	Morland.	Previous health poor. A mild case.
Slightly coated tongue, some diarrhœa and tenderness, rose spots on abdomen at entrance.	Sponge baths, fever mixture, flaxseed tea, sherry wine, 3 oz. daily, quinine.	Morland.	Previous health good. Disease commenced two days after bathing at the public baths.

* Autopsy. Moderate rigor: fibrinous coagulum in left auricle and ventricle of heart: posterior portions of both lungs somewhat friable, but crepitant: liver and kidneys normal: spleen enlarged: mesenteric glands prominent, but little enlarged: Peyers patches in lower portion of ileum, raised and ulcerated, sometimes extending to the muscular coat. A few small circular ulcers in upper portion of large intestine.

(*Continued.*)

No. of Case.	Name and Occupation. Vol. and page of record.	Age.	When admitted.	Days ill before entrance.	Duration till convalescence or death.	Result.	SYMPTOMS. Early.
48	T. H., Irish laborer. Vol. 9, page 231.	29	Sept. 4.	3	23 days.	Dead.	Chills followed by fever with perspiration, headache, general soreness of muscles, tenderness in iliac fossae.
49	A. W., American servant girl. Vol. 9, page 242.	19	Sept. 7.	14	27 days.	Well.	Chills followed by heat, headache, diarrhœa.
50	M. M., Irish laborer. Vol. 9, page 248.	31	Sep. 12.	10	30 days.	Well.	Chill, pain at epigastrium, vomiting, headache.
51	S. B., Nova Scotian servant girl. Vol. 9, page 262.	24	Sep. 18.	14	41 days.	Well.	Chills followed by fever, malaise, headache, diarrhœa.
52	M. H., New Brunswick harness maker. Vol. 9, page 279.	21	Sep. 24.	9	36 days.	Well.	Chill, headache, nausea, epistaxis, tendency to diarrhœa.
53	R. R., American shop girl. Vol. 10, page 106.	28	Apr. 28.	17	34 days.	Well.	Pain in back and limbs, feverishness, anorexia, great thirst.
54	T. C., American errand boy. Vol. 10, page 194.	14	May 26.	8	18 days.	Well.	Pain in back and at epigastrium, chills, headache, sense of weakness.
55	C. S., Nova Scotian painter. Vol. 10, page 214.	24	June 4.	21	50 days.	Well.	Chill followed by heat, stiffness in cervical muscles, lassitude, general malaise.
56	M. K., Irish servant girl. Vol. 11, page 1.	17	Sep. 26.	12	28 days.	Well.	Chill, headache, lassitude, diarrhœa, anorexia.

(*Continued.*)

SYMPTOMS. Advanced.	Treatment.	Name of Physician.	Remarks.
Hot and dry skin, headache, insomnia, constipation, delirium, pain in iliac regions, involuntary dejections.	Fever mixture, Dover's powder, castor oil, sponge baths, enemata, camphor and hyoscyamus, beef tea, milk punch.	Dr. Oliver.	Previous health good. Pulse 64 at entrance. Disease supervened after working in a damp cellar. Highest pulse rate 132. Temperature 105°. Disease steadily increased in severity from day of entrance.
Vertigo, vomiting, loss of appetite, pain at epigastrium, tenderness in left iliac, diarrhœa.	Chalk mixture, laudanum, boiled milk, tinct. cinchona comp.	Oliver.	Previous health poor. Diarrhœa had existed two weeks before entering hospital.
Flushed face, moist and hot skin, tongue coated in centre, diarrhœa, tympanites, tenderness of abdomen, rose spots noted on 16th.	Dover's powders, sponge baths, morphine, chalk mixture, tinct. opii, milk, beef tea.	Oliver.	Previous health good. Highest pulse rate 92. Temperature 101° 3′.
Faintness, pain in abdomen, diarrhœa, insomnia. Rose spots over abdomen at entrance.	Chalk mixture, Dover's powder, morphine, mustard fomentations over abdomen, camphor and hyoscyamus, milk punch and beef tea.	Oliver.	Previous health generally good. Pulse 100, temperature 104° 5′ at entrance. Highest temperature 105° 5′. Patient was exposed to typhoid fever four weeks before entrance.
Anorexia, slightly coated tongue, hot and moist skin, gurgling over whole abdomen, tenderness in iliac fossæ, rose spots at entrance, constipation, followed by diarrhœa.	Fever mixture, sponge baths, castor oil, mild astringents and opiates p. r. n.	Oliver.	Previous health feeble. Pulse 88, temperature 103° 5′ at entrance.
Dull and apathetic look, loaded tongue, confusion of intellect, disturbed sleep, hot and dry skin, great thirst, constipation, abdomen full, tender, rose spots on chest and abdomen noted 29th.	Castor oil, fever mixture, wine whey.	Blake.	Previous health fair. Pulse at entrance 124.
Hot and dry skin, moderate thirst, moist and moderately loaded tongue, slight epistaxis, rose spots on abdomen at entrance, constipation.	Fever mixture, castor oil, milk, beef tea.	Blake.	Previous health good. Pulse 100, temperature 104° at entrance, pulse gradually fell to 56.
Warm and moist skin, moist, slighly coated tongue, moderate thirst, sense of considerable exhaustion, bowels slightly constipated.	Mild cathartics, fever mixture, quinine.	Blake.	Previous health generally good. Pulse 84 at entrance. Patient was attacked after exposure to severe storm.
Moist, slightly coated tongue, vertigo, restlessness at night, tenderness in right iliac, constipation, gurgling.	Fever mixture, camphor and hyoscyamus, castor oil, sponge bath at night, milk diet.	Oliver.	Previous health good. Pulse 88 and temperature 101° 5′ at entrance. Highest pulse rate 116. Highest temperature 106°. Patient was doing well till Oct. 14, when a relapse took place from sitting in a draught.

(*Continued.*)

No. of Case.	Name and Occupation. Vol. and page of record.	Age.	When admitted.	Days ill before entrance.	Duration till convalescence or death.	Result.	SYMPTOMS. Early.
57	A. R., American tailoress. Vol. 11, page 33.	21	Oct. 12.	7	32 days.	Well.	Headache, feverishness, vomiting, pain in abdomen, diarrhœa.
58	A. S., German cabinet maker. Vol. 11, page 37.	28	Oct. 13.	12	21 days.	Well.	Headache, vertigo, pyrexia, constipation.
59	N. C., English servant girl. Vol. 11, page 66.	23	Oct. 27.	6	34 days.	Well.	Chills, headache, vertigo, constipation.
60	A. T., American servant girl. Vol. 11, page 72.	14	Oct. 30.	7	38 days.	Well.	Violent headache, pains throughout body, feverishness, anorexia, vertigo.
61	W. N., Irish shoemaker. Vol. 11, page 75.	40	Nov. 2.	12	34 days.	Well.	General malaise, chills, headache, vomiting, diarrhœa.
62	M. R., English servant girl. Vol. 11, page 110.	19	Nov. 12.	28	40 days.	Well.	Nausea, vomiting, slight pain in abdomen, diarrhœa.
63	C. O., German tailor. Vol. 11, page 125.	23	Nov. 13.	9	28 days.	Dead.	Headache, chills, slight cough, vertigo, vomiting, diarrhœa.
64	F. H., Irish laborer. Vol. 11, page 138.	33	Nov. 21.	16	40 days.	Well.	Chills, headache, pain in back and limbs, vomiting, diarrhœa.
65	J. F., Irish laborer. Vol. 11, page 76.	26	Aug. 2.	14	22 days.	Well.	Pain in bones and back, headache, epistaxis, slight cough, anorexia, sense of weakness, general malaise.
66	M. W. Irish servant girl. Vol. 11, page 86.	22	Aug. 4.	3	15 days.	Well.	Cramps in abdominal muscles, pain in back, chills, headache, nausea and vomiting, anorexia.

(*Continued.*)

SYMPTOMS. Advanced.	Treatment.	Name of Physician.	Remarks.
Headache, cough, epistaxis, tenderness and gurgling in iliac fossae, rose spots on abdomen noted Oct. 16th.	Sponge baths, beef tea, milk diet.	Oliver.	Patient was transferred from surgical ward where she had been under treatment for fracture. Temperature ranged about 100°. Pulse about 96; complicated with incipient phthisis.
Dry and slightly coated tongue, tenderness of abdomen, constipation, rose spots on abdomen noted Oct. 14.	Sponge baths, milk diet.	Oliver.	Previous health good. Pulse 80, temperature 103° at entrance. Highest temperature 104°. A mild case.
Slight coat on tongue, disturbed sleep, cough with thick yellow sputa, soreness of chest, constipation. Rose spots noted Nov. 1st.	Tepid sponge baths, castor oil, fever mixtures, tr. of columbo, iron during convalescence.	Oliver.	Previous health feeble. Disease supervened on exposure while insufficiently clad. Case complicated with incipient phthisis.
Hot and moist skin, slightly coated tongue, disturbed sleep, headache, vertigo, cough, constipation, tenderness of abdomen, gurgling in right iliac fossa, rose spots on abdomen noted Nov. 4th.	Castor oil, fever mixture, camphor, and hyoscyamus, sponge baths, Dover's powders, laxatives, cod liver oil, opiate fomentations to inflamed gland	Oliver and Borland.	Previous health poor. Pulse 96, temperature 104° 5′ at entrance. Phthisis was hereditary in the family. Patient had a suppurating gland in axilla which greatly prolonged convalescence
Tinnitus aurium, anorexia, vomiting, cough, vertigo, tenderness and gurgling in right iliac, diarrhœa, rose spots noted Nov. 5th.	Fever mixture, demulcents, chalk mixture, morphia p. r. n. milk and lime water. Tinct. ferri, chlor., cod liver oil.	Oliver and Borland.	Previous health good. Pulse 88 at entrance. Temperature ranged about 99°. Patient remained in hospital until April 10th, for the treatment of complications consisting of pleuro-pneumonia with pericarditis.
Chills, headache, vertigo, vomiting, dry cough, tenderness in right iliac, constipation.	Castor oil, sponge baths, milk diet.	Oliver.	Previous health generally good. Patient died in February following, with Addison's disease.
Headache, dizziness, sense of weakness, white coat on tongue, tenderness and gurgling in right iliac fossa, one or two rose spots noted on abdomen at entrance.	Sponge baths, milk, flax-seed tea, stimulants.	Oliver.	Previous health poor. Patient was doing well until pneumonia, affecting lower portions of both backs, supervened.
General muscular pains, disturbed sleep, mild delirium, cough, occasional vomiting, gurgling in right iliac, sudamina, rose spots on abdomen noted at entrance.	Sponge baths, conium and hyoscyamus, milk diet.	Oliver and Borland.	Previous health good. Pulse 80. Temperature 104° at entrance.
Urgent thirst, restlessness, apathetic look, hot and dry skin, later diaphoresis, moderately coated tongue dry and brown in centre, gurgling in right iliac fossa, constipation, rose spots on abdomen at entrance.	Fever mixture, Dover's powder, enemata, wine whey, beef tea, whiskey.	Reynolds.	Previous health good. Pulse 72 at entrance, at no time higher than 96.
Offensive breath, moist and lightly coated tongue, headache, vertigo, fulness and tenderness of abdomen, pain in left iliac region, urgent thirst, constipation.	Mild cathartics, fever mixture, Dover's powder, milk and beef tea, whiskey.	Reynolds.	Previous health good. Pulse 80 at entrance. Highest pulse rate 116.

(*Continued.*)

No. of case.	Name and Occupation. Vol. and page of record.	Age.	When admitted.	Days ill before entrance.	Duration till convalescence or death.	Result.	SYMPTOMS. Early.
67	M. F., Irish servant girl. Vol. 12, page 130.	21	Aug. 18.	4	16 days.	Well.	Chills, headache, anorexia, vomiting, pain in back and at epigastrium, constipation.
68	M. K., Irish laborer. Vol. 12, page 168.	35	Aug. 29.	14	37 days.	Well.	Chills, followed by heat, epistaxis, anorexia, thirst, insomnia.
69	J. H., Irish blacksmith. Vol. 12, page 190.	18	Sept. 3.	4	12 days.	Well.	Chills, followed by heat, headache, soreness in joints, anorexia, urgent thirst, diaphoresis, constipation.
70	C. G., American servant girl. Vol. 12, page 198.	28	Sept. 5.	14	30 days.	Well.	Loss of appetite, chills and heat alternately, slight vomiting, thirst, headache, soreness over chest, slight cough.
71	O. K., German shop boy. Vol. 14, page 16.	19	Oct. 16.	11	20 days.	Dead.	Languor, malaise, feverishness, headache, pain in back and limbs, anorexia, cough.
72	M. W., Irish laborer. Vol. 14, page 48.	41	Nov. 2.	14	34 days.	Well.	Chills, rigors, malaise, weakness, prostration, frequent epistaxis, diarrhœa.
73	K. C., Irish servant girl. Vol. 14, page 82.	20	Nov. 13.	14	34 days.	Well.	Headache, malaise, nausea, vomiting, muscular pains, weakness, epistaxis, diarrhœa.

(*Continued.*)

SYMPTOMS. Advanced.	Treatment.	Name of Physician.	Remarks.
Flushed face, vertigo, constipation and diarrhœa alternately, moist thin coat on tongue, thirst, disturbed sleep, pain at epigastrium, vomiting, "two or three doubtful-looking rose spots on abdomen," noted Aug. 19.	Fever mixture, Dover's powder, enemata, opium suppositories, milk, beef tea, whiskey.	Reynolds.	Previous health good. Pulse 84 at entrance, at no time higher. Disease supervened on exposure to cold and wet.
Flushed face, dull look, warm and moist skin, dry yellowish brown coat on tongue, sordes on teeth, great thirst, diaphoresis, cough, tympanites, tenderness in both iliac fossæ, constipation, rose spots on chest and abdomen at entrance.	Fever mixture, Dover's powder, enemata, whiskey, milk, beef tea, iron during convalescence.	Reynolds.	Previous health generally good. Pulse 84 at entrance. Highest pulse rate 96. Temperature 105. Attacked after exposure to severe storm.
Sense of weakness, headache, moderately coated tongue, vertigo, diaphoresis, constipation.	Dover's powder, fever mixture, enemata, morphia, p. r. n. whiskey.	Reynolds.	Previous health good. Pulse at no time above 96.
Apathetic look, dry and hot skin, epistaxis, moist, slightly coated tongue, offensive breath, restlessness, vertigo, exhaustion, increased heart's impulse, insomnia, tympanites, constipation.	Dover's powder, lemonade, fever mixture, morphia, bromide of potash, tinct. verat. vir., carb. of iron, and manganese.	Reynolds.	Previous health generally good. Pulse 104, temperature, 10° 55′ at entrance. Pulse at times varied from 88 to 116 in course of a few minutes.
Vacant look, hot and dry skin, dry, brown, thick fur on tongue, urgent thirst, diarrhœa, low-muttering delirium, tympanites, gurgling in iliac fossæ, rose spots on abdomen noted on 17th Oct., tenderness over whole abdomen, bloody dejections.	Fever mixture, Dover's powder, opiate enemata, opium suppositories, spts. turpentine, elix. opii. aa gtt. x every three hours, brandy, bromide of potassium, milk and beef tea.	Reynolds.	Previous health good. Pulse 130, and respiration 28 at entrance. Highest temperature 105°. Bloody discharge commenced two days after entrance, and continued until death.*
Sense of weakness and exhaustion, moist and warm surface, dry, brown hard tongue, husky voice, urgent thirst, diarrhœa, restlessness. On 23d is noted "an eruption of a papular character on arms and trunk, which has appeared within a week." On 31st is noted "eruption disappearing."	Dover's powder, sweet spirits of nitre, astringents, tinct. ferri chlor., bromid. potass, hyoscy. and camph., brandy and beef tea.	Reynolds.	Previous health good. Pulse at no time above 96. Highest temperature 104° 5′. Attacked after exposure to cold and wet.
Sense of great weakness, vertigo, disturbed sleep, muscular pains, tinnitus aurium, deafness, moderately furred tongue, slight cough, epigastric pain and tenderness, constipation.	Dover's powder, fever mixture, quinine and sherry, whiskey, milk, beef tea.	Reynolds and Upham.	Previous health good. Disease supervened on exposure to wet. Pulse 80, temperature 99 at entrance, with but little subsequent variation. The case was complicated with gastric irritation, which prolonged the convalescence.

*Autopsy.—Moderate rigor; hypostatic lividity of depending parts; much fibrinous coagulum in right side of heart; lungs, in depending portions of lower lobes, friable, not crepitant, splenified; liver large, friable; weight 15 oz. Kidneys healthy. Extensive ulceration of lower portion of ileum, involving three or four of Peyer's patches next the valves, the ulcers extending frequently through the mucous membrane. Large intestine somewhat congested; solitary glands distinct.

(*Continued.*)

No. of case.	Name and Occupation.. Vol. and page of record.	Age.	When admitted.	Days ill before entrance.	Duration till convalescence or death.	Result.	SYMPTOMS. Early.
74	J. D., Irish laborer. Vol. 14, page 94.	21	Nov. 19.	7	24 days.	Well.	Chills and heat, headache, muscular pains, general malaise, epistaxis, vertigo, anorexia.
75	G. E., Nova Scotian blacksmith. Vol. 13, page 84.	25	1867. Jan. 29.	11	31 days.	Well.	Chill, headache, epistaxis, muscular pains, cough, pain in abdomen, diarrhœa.
76	M. L., New Brunswick servant girl. Vol. 15, page 26.	21	Apl. 10.	4	61 days.	Well.	Headache, chills, muscular pains, nausea, constipation.
77	D. M., Irish laborer. Vol. 15, page 30.	22	Apl. 11.	3	47 days.	Well.	Headache, chills, great weakness, urgent thirst, loss of appetite, constipation.
78	F. C., American servant girl. Vol. 15, page 36.	18	Apl. 12.	6	48 days.	Well.	Chills, headache, nausea and vomiting, epistaxis, diarrhœa.
79	K. P., Irish servant girl. Vol. 15, page 54.	25	Apl. 16.	16	33 days.	Dead.	Loss of appetite, nausea, vomiting, general malaise.
80	M. L., New Brunswick servant girl. Vol. 15, page 68.	21	Apl. 17.	10	48 days.	Well.	Chills, heat, diaphoresis, vomiting, muscular pains, malaise.

(*Continued.*)

SYMPTOMS. Advanced.	Treatment.	Name of Physician.	Remarks.
Dull look, chills, vertigo, anorexia, dry and hot skin, subsequent diaphoresis, urgent thirst, restlessness, thick yellowish white coat on tongue, some fullness and tenderness of abdomen, gurgling in right iliac fossa.	Dover's powder, fever mixture, beef tea, milk diet.	Reynolds and Upham.	Previous health good. Pulse 76, temperature 104 at entrance, highest pulse-rate 96, highest temperature 105.
Headache, vertigo, epistaxis, cough and frothy expectoration, afterwards rusty; urgent thirst, anorexia, exhaustion, deafness, dry and hot skin, moist and moderate coat on tongue, gurgling, tenderness of abdomen, constipation alternating with diarrhœa, sudamina, rose spots on abdomen and lower part of chest at entrance.	Tepid sponging, fever mixture, Dover's powder, Hoffman's anodyne, enemata, astringents, milk diet, wine, whiskey and milk punch.	Borland.	Previous health good. Pulse 104, temperature 103° 5′, respiration 36 at entrance, case complicated with pneumonia, involving lower half of both backs, first noticed on Feb. 2d.
Violent headache, nausea, vomiting, flushed face, warm and moist skin, restlessness, gurgling, tenderness in right iliac fossa, sudamina, rose spots noted April 16th, on chest and abdomen.	Dover's powder, fever mixture, leeches to temples, ice, sponge baths, wine and quinine.	Morland.	Previous health good. Patient had taken care of a sister "sick with typhoid fever," three weeks before entrance. Pulse 100 at entrance, with but little variation, subsequent complication with hysteria and functional disease of the heart, which delayed convalescence.
Flushed face, warm and moist skin, moist, yellowish white coat on tongue, thirst, epistaxis, profuse diaphoresis, rose spots on abdomen, noted Sept. 16th.	Dover's powder, sponge baths, arom. sulph. acid, oxide of zinc, wine, brandy, carbonate of ammonia.	Morland.	Previous health fair. Pulse 92 at entrance. A child in same house with this patient was "ill with fever." Case complicated with pleurisy.
Hot and dry skin, great thirst, epistaxis, deafness, yellowish, pasty coat on tongue, tympanites, tenderness of abdomen, diarrhœa, delirium, involuntary dejections, rose spots on abdomen, noted April 16th.	Dover's powder, fever mixture, sulph. acid, sponge baths, opium fomentations to abdomen, sherry, brandy, carbonate of ammonia	Morland.	Previous health good. Pulse 120 at entrance.
Dull look, epistaxis, cough, râles, tympanites, gurgling in right iliac fossa, delirium subsultus, involuntary dejections, rose spots at entrance.	Fever mixture, demulcents, turpentine stupes, sherry, brandy, carbonate of ammonia, milk, beef tea.	Morland.	Previous health good. Pulse 96 at entrance, gradually rising to 132. Highest respiration 44. Complicated with bronchitis.*
Heavy look, moist white coat on tongue, hot and dry skin, thirst, soreness of throat, cough, epistaxis, diarrhœa and constipation, fullness, gurgling and tenderness of abdomen, rose spots at entrance.	Castor oil, fever mixture, ice, infusion of cinchona, wine, milk, beef tea.	Morland.	Previous health feeble. Disease supervened after nursing a sister sick with typhoid fever.

*Autopsy.— Moderate rigor, lividity, mucous membrane of trachæ and bronchi reddened. Ulcerations in lower six feet of ileum, penetrating in some cases to the peritoneal coat. Peyer's patches well defined, large intestines ulcerated, spleen large and soft.

(*Continued.*)

No. of Case.	Name and Occupation. Vol. and page of record.	Age.	When Admitted.	Days ill before entrance.	Duration till convalescence or death.	Result.	SYMPTOMS. Early.
81	C. P., English salesman. Vol. 15, page 114.	23	May 10.	Not stated.	12 days in Hospital.	Dead.	Not stated.
82	J. H., Swede, carriage trimmer. Vol. 15, page 234.	30	July 9.	24	43 days.	Well.	Headache, epistaxis, malaise, sense of weakness.
83	J. T., New Brunswick servant girl. Vol. 15, page 256.	20	July 15.	14	33 days.	Well.	Headache, chills, pain in back, malaise.
84	E. Y., American servant girl. Vol. 16, page 76.	17	Feb. 15.	14	33 days.	Well.	Headache, muscular pains, malaise, pyrexia, sense of weakness.
85	M. S., Irish servant girl. Vol. 16, page 117.	14	Feb. 25.	28	36 days.	Well.	Headache, vertigo, pain at epigastrium, also in neck and back.
86	J. C., New Brunswick laborer. Vol. 16, page 139.	27	Mar. 1.	28	45 days.	Well.	Chills, pyrexia, loss of appetite, lassitude, cough.
87	M. F., Nova Scotia cook-maid. Vol. 16, page 157.	34	Mar. 4.	10	30 days.	Well.	Pain in back and limbs, headache, general malaise, sense of exhaustion, anorexia, chills, followed by heat and nausea.
88	Q. D., American servant girl. Vol. 17, page 14.	16	July 27.	4	39 days.	Well.	Headache, pain in legs, anorexia, thirst, vomiting, pain at epigastrium, diarrhœa.

(*Continued.*)

SYMPTOMS. Advanced.	Treatment.	Name of Physician.	Remarks.
Hebetude, epistaxis, dry and caked tongue, violent delirium, diarrhœa, involuntary dejections, diaphoresis subsultus, jactitation, "8 or 10 doubtful rose spots" at entrance.	Ice, sponge baths, stimulating enemata, wine, brandy, carbonate of ammonia, milk, beef tea.	Morland.	Patient was delirious at entrance. Pulse 130.*
Loss of appetite, great thirst, tongue dry, fissured; hebetude, epistaxis, gurgling in right iliac fossa, tympanites, constipation, rose spots on abdomen at entrance.	Castor oil, sherry wine, beef tea, milk diet.	Morland.	Pulse 108. Patient very little delirious at entrance.
Headache, flushed face, warm, moist skin, creamy white coat on tongue, loss of appetite, thirst, vomiting, constipation, tympanites.	Ice, Dover's powder, enemata, infusion of serpentaria, sherry, beef tea, milk diet.	Morland and Oliver.	Previous health good. Mild case.
Headache, epistaxis, flushed face, hot, dry skin, anorexia, thirst, creamy coat on tongue, sordes on teeth, slight cough with some rusty expectoration, tenderness of abdomen, tympanites, constipation, wandering delirium, rose spots on abdomen noted on the 18th.	Dover's powder, fever mixture, ice, castor oil, wine whey, milk diet.	Upham.	Previous health delicate. Pulse 120. Temperature 105°. Respiration 32 at entrance. Case complicated with pneumonia, involving lower third of right back.
Headache, pain at epigastrium, sense of great weakness, vertigo, pain in back of neck and lumbar region, moist and hot skin, moist and lightly coated tongue, disturbed sleep, tenderness, gurgling in iliac fossæ, constipation.	Dover's powder, fever mixture, castor oil, brandy, oil of turpentine in emulsion, sherry wine instead of brandy, broths, milk-diet, quinine.	Upham and Blake.	Previous health good. Pulse 80 at entrance, soon becoming irregular and intermitting. Case complicated with neuralgic troubles and gastric irritation, which greatly retarded convalescence.
Tongue thickly coated, inclining to be dry; headache, cough with expectoration, sense of exhaustion, disturbed sleep, gurgling in iliac region, constipation, rose spots on chest and abdomen, noted March 5th.	Dover's powder, demulcents, castor oil, fever mixture, wine-whey, iron during convalescence.	Upham and Blake.	Previous health poor. Pulse 92 at entrance. Highest temperature 104°. No acute symptoms at any time during disease. This patient had incipient phthisis.
Epistaxis, vertigo, nausea, vomiting, muscular pains, exhaustion, cough, dry and thickly coated tongue, tendency to stupor, diarrhœa alternating with constipation, tenderness in iliac fossæ, gurgling, rose spots, March 5th.	Dover's powder, fever mixture, castor oil, demulcents, milk, wine-whey, brandy.	Upham and Blake.	Previous health generally good. Pulse 100. Temperature 101–5° at entrance. Highest pulse-rate 120. Complicated with bronchitis and tonsillitis.
Deafness, hebetude, moist, dirty brown tongue, cough, delirium, gurgling in right iliac fossa, marked tenderness, diarrhœa, rose spots July 31st.	Dover's powder, demulcents, ice, mild astringents, milk, quinine, cod liver oil.	Morland and Oliver.	Previous health good. Pulse 116 at entrance. Highest temperature 104–5°. Complicated with incipient phthisis.

*Autopsy.—Hypostatic lividity; a little subarachnoid effusion, a drachm of serum in each lateral ventricle, blood thin in heart, hypostatic congestion of lungs, Peyer's patches large and distinct, with superficial ulcerations, most marked near cæcum, traces of ulcerations in large intestines, mesenteric glands reddened, mucous membrane of stomach injected, spleen soft and large.

(*Continued.*)

No. of Case.	Name and Occupation. Vol. and page of Record.	Age.	When admitted.	Days ill before entrance.	Duration till convalescence or death.	Result.	SYMPTOMS. Early.
89	M. H., N.Brunswick, laborer. Vol. 17, page 68.	19	Aug. 8.	6	20 days.	Well.	Headache, epistaxis.vertigo, nausea, chills, diarrhœa.
90	J. W., Irish school-boy. Vol. 17, page 136.	10	Aug. 24.	14	31 days.	Well.	Chills, nausea, loss of appetite and strength, diarrhœa, pain in abdomen.
91	A. J., American servant girl. Vol. 17, page 246.	18	Oct. 14.	13	22 days.	Well.	Chills, headache, restlessness, anorexia, disturbed sleep, muscular pains.
92	B. C., Irish laborer. Vol. 17, page 250.	28	Oct. 15.	14	27 days.	Well.	Chills, headache, epistaxis, anorexia, muscular pains, constipation.
93	J. C., Irish carpenter. Vol. 17, page 254.	23	Oct. 16.	18	28 days.	Well.	Chill followed by heat, anorexia, slight pains in chest, disturbed sleep, thirst, constipation.
94	P. H., Irish laborer. Vol. 17, page 266.	25	Oct. 19.	14	24 days.	Well.	Chill, epistaxis, soreness of muscles, "heaviness," general malaise, diarrhœa.
95	M. N., Irish servant girl. Vol. 18, page 20.	24	Apr. 24.	3	20 days.	Well.	Loss of appetite, headache, vertigo, malaise, anorexia, muscular pains, pyrexia, urgent thirst.
96	M. G., Nova Scotia servant girl. Vol. 18, page 62.	28	1867. May 11.	6	38 days.	Well.	Chills followed by weakness, heat, epistaxis, headache, slight cough, nausea, pain in back and limbs, diarrhœa.
97	J. W., Nova Scotia carpenter. Vol. 18, page 22.	Not stated.	July 14.	28	44 days.	Well.	Chills followed by heat, headache, cough, pain in back, limbs, and abdomen, vomiting, diarrhœa.
98	M. L., Irish servant girl. Vol. 19, page 32.	40	Oct. 29.	21	31 days.	Well.	Chill, headache, anorexia, cough, disturbed sleep.

(*Continued.*)

SYMPTOMS. Advanced.	Treatment.	Name of Physician.	Remarks.
Moist and slightly coated tongue, warm and moist skin, insomnia, gurgling sudamina, rose spots on abdomen Aug. 11.	Hyoscyamus and camphor at night, milk, beef tea.	Oliver.	Pulse 80 at entrance; but little subsequent variation. Highest temperature 102°.
Moist and slightly coated tongue, cough, gurgling in right iliac fossa, sudamina, constipation, rose spots on abdomen at entrance.	Milk, beef tea.	Oliver.	Previous health good. Pulse 130 at entrance; afterwards fell as low as 52.
Flushed face, dull look, warm and moist skin, dirty white coat on tongue, thirst, hebetude, delirium, constipation, abdomen swollen, tenderness in iliac fossæ, rose spots on chest and abdomen noted at entrance.	Castor oil, fever mixture, sponge baths, tinct. hyoscyamus, laudanum fomentations to abdomen, milk, beef tea.	Oliver.	Pulse 104 at entrance, highest pulse-rate 128, highest temperature, 103.
Loss of appetite, muscular pains, bad taste in mouth, fetid breath, dull look, moist, slightly coated tongue, diaphoresis, constipation, gurgling in iliac fossæ.	Rochelle powder, milk diet.	Oliver.	Previous health generally good. Pulse 100. Patient sat up during most of the time.
Warm and moist skin, moist and highly coated tongue, epistaxis, headache, pain in chest, constipation, pain and gurgling in iliac fossæ, rose spots on chest and abdomen at entrance.	Castor oil, sponge baths, camphor and hyoscyamus, morphia p. r. n. beef tea, milk diet.	Oliver.	Previous health good. Patient transferred to surgical department for treatment of abscesses. Case complicated with erysipelas.
Moist and cool skin, moist and slightly coated tongue, some thirst, diaphoresis, insomnia, constipation.	Dover's powder, fever mixture, castor oil, camphor and hyoscyamus, morphia, p. r. n. beef tea, milk diet.	Oliver.	Previous health good. Pulse 84 at entrance, with but little subsequent variation.
Dull look, hot and dry skin, brown, thickly coated tongue, headache, disturbed sleep, vomiting, pain at epigastrium, constipation, tympanites, rose spots on abdomen and thorax.	Fever mixture, Dover's powder, enemata, sinapism to epigastrium, citrate of magnesia, wine whey, beef tea, milk diet, quinine.	Blake.	Previous health good. Highest pulse-rate 102.
Flushed face, hot and dry skin, dry and brown tongue, loss of appetite, thirst, disturbed sleep, nervous agitation, constipation, tympanites, rose spots noted May 18th.	Dover's powder, fever mixture, enemata, wine whey, beef tea, milk diet, infusion of gentian.	Blake.	Previous health delicate. Pulse at entrance, 108; ranged at about 84 after the first week.
Flushed face, confused intellect, hot and dry skin, slightly coated tongue, bronchial râles, thirst, constipation, tympanites, gurgling, tenderness in iliac fossæ, rose spots noted at entrance.	Enemata, Dover's powder, tinct. ferri. chlor, quinine, brandy, wine whey, milk diet.	Blake.	Previous health good. Pulse 96 at entrance.
Moist and cool skin, dirty white coat on tongue, anorexia, scanty urine, gurgling in right iliac fossa, constipation.	Castor oil, milk, beef tea.	Oliver.	Previous health good. A mild case.

(*Continued.*)

No. of case.	Name and occupation. Vol. and page of record.	Age.	When admitted.	Days ill before entrance.	Duration till convalescence or death.	Result.	SYMPTOMS. Early.
99	E. W., American female nurse. Vol. 20, page 14.	60	Aug. 6.	12	25 days.	Dead.	Pains in joints and limbs, "chills, followed by fever," headache, slight cough with expectoration, nausea, vomiting.
100	W. O'B., Irish varnisher. Vol. 20, page 160.	22	1867. Sept. 6.	7	34 days.	Well.	Chills, followed by much heat, diaphoresis, nervous tremors, dull pain in chest, pains in iliac regions, general malaise.
101	M. H., Irish servant girl. Vol. 20, page 166.	22	Sept. 7.	14	36 days.	Dead.	Headache, epistaxis, pain in back and limbs, vomiting, pain and swelling in epigastrium, exhaustion.
102	G. B., American hack driver. Vol. 20, page 180.	23	Sept. 9.	9	19 days.	Dead.	Chills followed by heat, headache, cough, pains throughout body, diarrhœa, vomiting.
103	H. S., German clerk. Vol. 20, page 204.	22	Sept. 12.	26	50 days.	Well.	Chills, vertigo, lassitude, slight cough, epistaxis, diarrhœa.
104	S. D., American servant girl. Vol. 20, page 260.	21	Sept. 30.	14	48 days.	Dead.	General malaise, subsequently chills followed by heat, pain throughout body, headache, general muscular pains, abdominal distress, constipation.

(Continued.)

SYMPTOMS. Advanced.	Treatment.	Name of Physician.	Remarks.
Flushed face, nausea, vomiting, dry and dirty brown tongue, frequent chills, diaphoresis, difficult micturition, urgent thirst, constipation, insomnia, restlessness, noisy delirium, involuntary dejections, mixed with small coagula of blood.	Dover's powder, enemata, fever mixture, bromide of potash, quinine, mild cathartics, beef tea, whiskey.	Reynolds.	Previous health poor. Pulse 112 at entrance.
Much exhaustion, hurried breathing, slightly coated tongue, afterwards dry and brown, sordes on teeth and lips, restlessness, pain in hypochondriac regions, diaphoresis, cough, constipation, gurgling in left iliac region, violent delirium; rose spots on abdomen, noted on the 10th.	Dover's powders, fever mixture, enemata, bromide of potash, sherry wine whiskey, milk diet.	Reynolds.	Previous health poor. Patient had, for three weeks previously, suffered from pain in iliac regions. Pulse 84 at entrance, highest rate 120, highest temperature, 105° 5′ on the 12th day.
Flushed face, hot skin, hebetude, deafness, epistaxis, brown dry tongue, sordes on teeth, pain in chest, cough, slight crepitus, pain and tenderness at epigastrium, also in right iliac region, with gurgling, profuse diaphoresis, vomiting, diarrhœa, nervous agitation, delirium, coma; rose spots on abdomen, noted on the 15th.	Fever mixture, Dover's powder, morphia p. r. n., Hoffman's anodyne, whiskey, brandy, milk diet.	Reynolds.	Previous health generally good. Patient came to this country six months previously; subsequent health poor. Pulse 96, temperature 103° 5′ at entrance; highest temperature 106° 5′ on the 15th, highest pulse rate 152, the day before death. This case was complicated with gastric irritation and pneumonia.
Flushed face, deafness, great exhaustion, disturbed sleep, dry and brown tongue, sordes on teeth, fetid breath, great thirst, hebetude, much tympanites, gurgling and tenderness in right iliac fossa, diarrhœa, involuntary dejections, violent delirium, rose spots on abdomen, noted on the 10th.	Fever mixture, brandy, sherry wine, beef tea.	Reynolds.	Previous health good. Pulse 104, temperature 106° 2′, respiration 36 at entrance. Pulse ranged from 80 to 128. Patient was a large, stout, plethoric person, attacked after exposure to wet. Post mortem examination not obtained.
Epistaxis, vertigo, great exhaustion, flushed face, dull look, dry and brown tongue, sordes on teeth, disturbed sleep, tenderness and gurgling in right iliac fossa, delirium; rose spots on chest and abdomen at entrance.	Fever mixture, Dover's powder, whiskey, sherry wine, beef tea.	Reynolds.	Previous health good. Pulse 100 at entrance, after the first two days continued about 80. Highest temperature 106°.
Flushed face, exhaustion, sense of heaviness in head, anorexia, cough, tenderness, pain at epigastrium, dirty brown tongue, sordes on teeth, fetid breath, vomiting, diarrhœa, noisy delirium, sloughing over sacrum, involuntary dejections, hemorrhage from the bowels.	Fever mixture, brandy, wine whey, carbonate of ammonia, boiled milk, beef tea, morphine, suppositories.	Reynolds.	Previous health poor. Pulse 104 at entrance, 160 the day before death; highest temperature 105° 5′.*

*Autopsy.—Marked emaciation, bed sores on hips and sacrum, thoracic organs healthy, abdomen distended, stomach normal, liver pale, showing fat globules under the microscope, spleen somewhat softened, numerous ulcerations in lower six feet of ileum, three or four of Peyer's patches injected, large intestines studded with ulcerations of the size of a pea, some involving all but the outer coat.

(*Continued.*)

No. of Case.	Name and Occupation. Vol. and page of record.	Age.	When admitted.	Days ill before entrance.	Duration till convalescence or death.	Result.	SYMPTOMS. Early.
105	A. H., Irish cook-maid. Vol. 22, page 14.	24	Oct. 8.	14	20 days.	Well.	Chills followed by heat, profuse diaphoresis, exhaustion, anorexia, headache, thirst, constipation.
106	P. W., Nova Scotian carpenter. Vol. 22, page 22.	26	Oct. 9.	4	9 days.	Dead.	Chills followed by heat, diaphoresis, exhaustion, headache, epistaxis, pain in back and limbs, abdominal pains, diarrhœa.
107	F. F., American carpenter. Vol. 22, page 150.	22	Nov. 7.	14	27 days.	Well.	Headache, pain in chest, cough, hurried respiration, malaise.
108	J. M., American errand-boy. Vol. 22, page 270.	15	Dec. 16.	Not stated.	9 days in hospital.	Dead.	General malaise, loss of appetite, chills, headache, pain in back and limbs, cough with expectoration.
109	J. S., English watch maker. Vol. 24, page 24.	21	Dec. 23.	21	46 days.	Well.	Headache, pain in back, general malaise, epistaxis, abdominal pains, constipation.
110	S. C., English housekeeper. Vol. 21, page 156.	26	1868. Feb. 15.	14	38 days.	Well.	Chills followed by heat, diaphoresis, pain in legs, headache, vomiting, insomnia, abdominal pains, constipation.
111	M. C., Irish laborer. Vol. 23, page 18.	21	Mar. 13.	13	60 days.	Well.	General malaise, headache, chills, anorexia, muscular pains, diarrhœa.
112	C. J., Irish housekeeper. Vol. 23, page 124.	40	Mar. 31.	25	56 days.	Well.	Chills, headache, nausea, vomiting, pyrexia, abdominal pain, diarrhœa.

(*Continued.*)

SYMPTOMS. Advanced.	Treatment.	Name of Physician.	Remarks.
Flushed face, hot and dry skin, anorexia, thirst, dry and thinly coated tongue, cough, insomnia, tympanites; rose spots on abdomen noted Oct. 11th.	Dover's powder, fever mixture, enemata, Hoffman's anodyne, whiskey.	Reynolds.	Previous health good.
Sense of great exhaustion, hot, moist skin, dry, red, fissured tongue, nervous agitation, intense abdominal pains, flatulence, tympanites, tenderness, subsultus, diarrhœa, noisy delirium.	Fever mixture, ice, brandy, turpentine stupes, morphia, p.r.n.	Reynolds.	Previous health good. Pulse 96. Temperature 104° at entrance. A brother was "sick with typhoid fever" in the same house with this patient. Pulse 106 the evening before death, at which time the patient complained of extreme abdominal pain. Autopsy not obtained.
Headache, dry, thinly coated tongue, disturbed sleep, diarrhœa, bloody dejections, tenderness in right iliac fossa, rose spots on abdomen noted Nov. 16th.	Fever mixture, Dover's powder, astringents, bromide of potassium, whiskey, quinine, tincture of gentian during convalescence.	Reynolds and Upham.	Previous health generally good. Pneumonia existed for ten weeks previous to the development of typhoid fever. Patient had not fully recovered when attacked with fever.
Flushed face, apathetic look, cough, dry and brown tongue, sordes on teeth and lips, tympanites, gurgling, rose spots on abdomen, noted Dec. 17th, involuntary dejections, tenderness, subsultus, delirium, coma.	Castor oil, Dover's powder, fomentations, stimulating enemata, brandy, wine whey, milk, beef tea.	Upham.	Previous health good. Pulse 108, respiration 28 at entrance. Patient unable to give much account of himself owing to his delirious condition. Symptoms gradually increased in severity until death. Case complicated with pneumonia. Post mortem not obtained.
Flushed face, coated tongue, inclining to dry, moist surface, nervous agitation, abdominal pain and tympanites, gurgling in right iliac fossa, rose spots on chest and abdomen at entrance, constipation.	Castor oil, Dover's powder, fever mixture, morphia, milk punch, milk and water *ad libitum.*	Upham.	Previous health good. Pulse 88, regular at entrance; continued the same until Jan. 1st when it fell to 60, irregular and intermittent; after four days it resumed its former rate.
Flushed face, stupid expression, dry, hot skin, thirst, loaded, dry, fissured tongue, nausea, gurgling, and tenderness in right iliac fossa, rose spots noted Feb. 11th, delirium.	Tinct. humuli, enemata of beef tea, milk, beef tea, milk punch.	Borland.	Pulse 128, temperature 104, patient delirious at time of entrance. Case complicated with pregnancy.
Epistaxis, deafness, flushed face, moist, creamy coat on tongue, urgent thirst disturbed sleep, hebetude, fullness of abdomen, gurgling, tympanites, rose spots on abdomen at entrance, afterwards on extremities and back, wandering delirium, diarrhœa, furunculi.	Dover's powder, ice, Hoffman's anodyne, sherry wine, sesqui. carb. of ammonia, brandy substituted for sherry, quinine during convalescence, milk, beef tea.	Borland and Bowditch.	Previous health generally good. Pulse 84 at entrance; frequent attacks of epistaxis for two weeks after entrance. Considerable deafness remained at time of leaving hospital. Case complicated with furuncull, which retarded convalescence.
Hot and dry skin, moist, loaded tongue, cough with râles, tympanites, tenderness throughout abdomen, nervous agitation, violent delirium, rose spots at entrance, diarrhœa, followed by constipation, furunculi.	Ice, Dover's powder, astringents, enemata, brandy, milk, beef tea.	Borland and Bowditch.	Patient lives in a damp locality, having a foul odor in consequence of defective drainage. Her daughter is also sick with fever.

(*Continued.*)

No. of case.	Name and occupation. Vol. and page of record.	Age.	When admitted.	Days ill before entrance.	Duration till convalescence or death.	Result.	SYMPTOMS. Early.
113	M. J., American girl. Vol. 23, page 128.	12	Mar. 31.	32	62 days.	Well.	Chills, headache, nausea, vomiting, pyrexia, &c.
114	C. A., American school girl. Vol. 23, page 190.	10	April 8.	14	27 days.	Well.	Chills, malaise, vomiting, diarrhœa, cough, pain in left chest.
115	J. M., English printer. Vol. 26, page 230.	26	April 8.	14	29 days.	Well.	Chills followed by heat, headache, pain at epigastrium, pain in joints, sleeplessness.
116	C. D., Irish laborer. Vol. 27, page 158.	25	June 29.	10	26 days.	Well.	Pain in chest, headache, diarrhœa, malaise.
117	M. W., American mattress-maker (female). Vol. 28, page 172.	15	May 25.	4	43 days.	Well.	Severe pain in head, neck and chest, pyrexia, thirst, constipation.
118	A. W., Irish servant girl. Vol. 28, page 244.	25	June 9.	21	79 days.	Well.	Pyrexia, followed by diaphoresis, great exhaustion, vomiting, disturbed sleep, diarrhœa, malaise.
119	K. D., American housekeeper. Vol. 29, page 126.	20	Aug. 20.	10	32 days.	Well.	Headache, general malaise, muscular pains, diarrhœa.
120	H. P., Irish blacksmith. Vol. 29, page 132.	30	Aug. 21.	14	35 days.	Well.	Chills, lassitude, disinclination for work, headache, malaise, diarrhœa.
121	J. C., American carpenter. Vol. 29, page 146.	22	Aug. 24.	10	24 days.	Well.	Headache, chills, nausea, epistaxis, pain in back and limbs.

(*Continued.*)

SYMPTOMS. Advanced.	Treatment.	Name of Physician.	Remarks.
Loss of flesh, dry, harsh skin, hebetude, moist coated tongue, abdominal tenderness, sudamina, noisy delirium, constipation, furunculi.	Dover's powder, sweet spts. of nitre, enemata, sherry, milk, beef tea.	Bowditch.	Daughter of preceding patient. Hygienic surroundings bad.
Epistaxis, cough, moist, thinly coated tongue, drowsiness, tympanites, tenderness, rose spots noted April 9th, constipation.	Dover's powder, castor oil, spts. nit. eth., milk.	Bowditch.	Previous health good. Pulse 124, respiration 28 at entrance.
Hot skin, sense of exhaustion, loss of appetite, thirst, dry, red fissured tongue, diarrhœa, tympanites, gurgling in both iliac fossæ, rose spots on thorax, noted April 11th.	Fever mixture, tinct. opii, catechu., citrate of iron, quinine, milk, beef tea.	Blake.	Previous health fair. Pulse 94 at entrance, highest temperature 100° 5′.
Headache, moist and hot skin, exhaustion, disturbed sleep, tinnitus aurium, vomiting, insomnia, rose spots on abdomen, noted July 1st, constipation alternating with diarrhœa, tympanites.	Castor oil, Dover's powder, fever mixture, sponge baths, bromide of potash, milk and lime water, mild astringents, sherry.	Bowditch and Oliver.	Previous health good. Pulse 92 at entrance. Attacked after drinking freely of cold water.
Urgent pain in head, especially in supra-orbital regions, dilated pupils, intolerance of light, marked tenderness over whole of the spine, hot and dry skin, sensitive surface, dry brown tongue, sordes, mild delirium, moaning, swollen and sensitive abdomen; rose spots noted May 29th, diarrhœa.	Fever mixture, bromide of potassium, Dover's powder, poultices to abdomen, turpentine, wine whey, brandy, milk, quinine during convalescence.	Blake.	Previous health good. Pulse 124 at entrance, highest pulse-rate 132. Symptoms of cerebro-spinal meningitis were observed throughout the case, and greatly retarded convalescence.
Moist, hot skin, loaded and fissured tongue, exhaustion, fullness and tenderness of abdomen, gurgling in iliac fossæ, sudamina, rose spots noted June 10th, subsultus, delirium, diarrhœa alternating with constipation.	Fever mixture, Dover's powder, bromide of potash, turpentine, sherry, brandy, milk, beef tea, quinine in later stages of disease.	Blake and Reynolds.	Previous health generally good. Pulse at entrance 108, highest rate 144. Patient came from Ireland two months previously; was sea-sick on the voyage.
Anxious look, restlessness, hebetude, diaphoresis, dry and slightly coated tongue, diarrhœa, delirium, tenderness in right iliac fossa.	Brandy, milk, wine whey, morphia at night.	Oliver.	Previous health good. Pulse at entrance 110. The husband of this patient was ill with typhoid fever in the hospital.
Flushed face, wild look, sensitiveness to sound, cough, moist, pasty tongue, tympanites, tenderness in right iliac, rose spots on abdomen at entrance, constipation followed by diarrhœa.	Castor oil, bromide of potash, milk, sherry, beef tea.	Oliver.	Previous health generally good. Pulse 100 at entrance, at no time above 104.
Diaphoresis, cough, dryness of throat, dry, yellowish, slightly fissured tongue, tenderness of abdomen, gurgling, rose spots on abdomen at entrance.	Milk diet.	Oliver.	Previous health generally good. Pulse at entrance 88, at no time higher.

(*Continued.*)

No. of Case.	Name and Occupation. Vol. and page of record.	Age.	When admitted.	Days ill before entrance.	Duration till convalescence or death.	Result.	SYMPTOMS. Early.
122	H. M., Irish servant girl. Vol. 29, page 168.	25	Aug. 26.	8	36 days.	Well.	Chills, headache, anorexia, general malaise, constipation.
123	J. J., English — (male). Vol. 29, page 178.	18	Aug. 31.	7	23 days.	Well.	Loss of appetite, headache, vomiting.
124	J. P., Nova Scotia carpenter. Vol. 29, page 190.	28	Sept. 2.	21	30 days.	Dead.	Loss of appetite, chills, headache, epistaxis, tinnitus aurium, diarrhœa.
125	C. C., American farmer. Vol. 30, page 188.	18	July 29.	5	22 days.	Well.	Sense of exhaustion, general muscular pains, headache, vertigo, pyrexia, thirst, insomnia, diarrhœa.
126	D. D., American schoolboy. Vol. 30, page 212.	13	Aug. 1.	5	20 days.	Well.	Headache, pain in back, pyrexia, thirst, epistaxis, diarrhœa.
127	N. B., Irish oyster-man. Vol. 30, page 258.	22	Aug. 7.	11	25 days.	Well.	Severe cough, chills followed by heat, epistaxis, thoracic and abdominal pain.
128	T. H., Irish laborer. Vol. 31, page 8.	24	Sep. 22.	7	17 days.	Well.	Epistaxis, deafness, vertigo, general muscular pains, cough, pain beneath sternum.
129	J. R., American cabinet-maker. Vol. 31, page 4.	27	Sep. 21.	14	32 days.	Dead.	General muscular pains, headache, nausea, anorexia, chills followed by heat, vertigo.

(*Continued.*)

SYMPTOMS. Advanced.	Treatment.	Name of Physician.	Remarks.
Loss of strength, moist slightly coated tongue, tenderness in iliac fossæ, tympanites, constipation.	Castor oil, opiates, bromide of potash, milk diet, tinct. cinchon. ferri during convalescence.	Oliver.	Previous health good. Pulse 86 at entrance; highest rate, 96.
Flushed face, hot and moist skin, heavily loaded tongue, tenderness in right iliac fossa rose spots on abdomen noted Sept. 4th. Diarrhœa, sudamina.	Mild astringents, milk diet.	Oliver.	Previous health good. Patient arrived from Liverpool in a crowded steamer seven days before entrance. Hygienic surroundings after landing, poor.
Cough with expectoration, thick yellow coat on tongue, moist hot skin, sordes, abdominal tenderness, gurgling, constipation, rose spots on abdomen at entrance, contracted pupils, coma.	Castor oil, Dover's powder, opiates, carbonate of ammonia, milk, brandy, beef tea.	Oliver.	Previous health generally good; pulse 104 at entrance. Patient was delirious throughout; had extreme pain in abdomen for 24 hours before death. A *post-mortem* examination showed no perforation. Peyer's patches were greatly congested, those nearest the cæcum were ulcerated, cæcum and upper portion of colon much congested
Apathetic look, hot and dry skin, severe pain in back, thin, whitish coat on tongue, tenderness in right iliac fossa; rose spots at entrance, diarrhœa.	Fever mixture, Dover's powder, whiskey, milk, beef tea.	Blake and Reynolds.	Previous health good. Pulse 108, temperature 104° 8′ at entrance. Six days after, pulse had fallen to 81, temperature to 100°.
Flushed cheeks, dull look, hot and dry skin, thin whitish coat on tongue, tenderness in umbilical region, constipation.	Enemata, milk, beef tea.	Reynolds.	Previous health good. Pulse 104, temperature 103°, respiration 36 at entrance; attacked after bathing in salt water and sleeping in a cool cellar the following night.
Flushed face, anxious look, pasty tongue, cough with tenacious sputa, diaphoresis, vertigo, tenderness of abdomen, rose spots on chest and abdomen, Aug. 8, diarrhœa.	Dover's powder, fever mixture, demulcents, astringents, stimulants.	Reynolds.	Previous health good. Highest pulse-rate 88; highest temperature 104° 5′. Disease supervened on exposure to wet and cold. Case complicated with bronchitis.
Flushed face, pain in chest, cough, sonorous râles, headache, very slightly coated tongue, deafness, gurgling in iliac fossæ.	Bromide of potash, jacket-poultice, milk diet	Oliver.	Previous health good. Pulse 56, respiration 32 at entrance; highest pulse-rate 88, highest temperature 101° 5′. Symptoms of pneumonia, involving base of both backs, manifested themselves three weeks before those of typhoid fever.
Flushed face, great exhaustion, moist skin, moist, thickly coated tongue, afterwards dry and fissured, intense thirst, vomiting, diarrhœa, fullness and tenderness of abdomen, rose spots at entrance, delirium, subsultus, carphologia, coma.	Dover's powder, sponge baths, laudanum fomentations to abdomen, bromide of potash, astringents, stimulants, milk diet.	Oliver.	Previous health good. Pulse 88; temperature 102° at entrance. Disease steadily progressed in severity until death.

(*Continued.*)

No. of Case.	Name and Occupation. Vol. and page of record.	Age.	When admitted.	Days ill before entrance.	Duration till convalescence or death.	Result.	SYMPTOMS. Early.
130	T. N., American boy. Vol. 31, page 14.	15	Sept. 24.	14	61 days.	Well.	Chill, headache, anorexia, muscular pains, epistaxis, cough, diarrhœa.
131	J. B., Irish laborer. Vol. 31, page 24.	33	Sept. 28.	7	39 days.	Well.	Chills, diarrhœa, anorexia.
132	M. L., Irish servant girl. Vol. 31, page 40.	18	Admitted Oct. 1; fever began Oct. 14.	0	36 days.	Well.	Chills, nausea, epigastric pain, diarrhœa, general malaise.
133	B. C., Irish chambermaid. Vol. 31, page 44.	21	Oct. 3.	9	70 days.	Well.	Chill, headache, anorexia, muscular pains, vertigo, epistaxis, deafness.
134	R. M., Irish chambermaid. Vol. 31, page 46.	21	Oct. 3.	7	26 days.	Well.	Chill, followed by heat, headache, anorexia, vertigo, vomiting, epistaxis, diarrhœa.
135	J. C., Irish laborer. Vol. 31, page 50.	23	Oct. 5.	10	30 days.	Well.	Chill, anorexia, vertigo, general pains, diarrhœa.
136	A. S., American housekeeper. Vol. 31, page 136.	22	Oct. 29.	14	21 days.	Well.	Chill, followed by heat, vertigo, headache, mild delirium, muscular pains, cough, diarrhœa.
137	E. C., American servant girl. Vol. 32, page 30.	18	Aug. 15.	14	93 days.	Well.	Headache, general pains, pyrexia, thirst, abdominal tenderness, diarrhœa.

(Continued.)

SYMPTOMS. Advanced.	Treatment.	Name of Physician.	Remarks.
Apathetic look, thick, yellowish coat on tongue, sordes on teeth, cough, coarse râles in both backs, deafness, tenderness and gurgling in right iliac, rose spots on abdomen at entrance, diarrhœa.	Bromide of potash, chalk mixture, milk diet.	Oliver.	Pulse 108, temperature 103°; respiration 40 at entrance. Disease supervened on exposure to wet. Complicated with bronchitis which retarded convalescence.
Confused intellect, apathetic look, deafness, parched tongue, sordes on teeth, thirst, cough, slight crepitus, tympanites, rose spots on abdomen at entrance, delirium, constipation.	Castor oil, jacket poultice, mucilaginous drinks, opiates, brandy, milk diet.	Oliver.	Highest pulse rate 96. Pneumonia developed itself Oct. 26, involving base of right back.
Flushed face, thin, whitish coat on tongue, muscular pains, epistaxis, vertigo, tenderness in right iliac, rose spots on abdomen, noted Oct. 24, diarrhœa.	Fever mixture, bismuth, effervescing powders, milk diet.	Oliver.	Previous health impaired. Highest pulse rate, 120; highest temperature, 104° 3′. Patient was admitted for psoriasis. Fever supervened fourteen days after entrance. A patient with typhoid lay in fourth bed from her.
Flushed face, deafness, hot skin, moist, heavily loaded tongue, afterwards dry, sordes on teeth, vomiting, delirium, tenderness, rose spots on abdomen at entrance, constipation, furunculi, abscesses.	Castor oil, sponge baths, bromide of potash, morphia, p. r. n., milk diet, hot fomentations over abdomen, quinine, tinct. cinch. ferri.	Oliver and Borland.	Previous health good. Pulse 116 at entrance. Highest pulse rate, 124; highest temperature, 106°; convalescence much retarded by the occurrence of furunculi and abscesses over middle of dorsal vertebræ.
Flushed face, exhaustion, thin white coat on tongue, cough, with scanty expectoration, chills, vomiting, abdominal tenderness, insomnia, constipation.	Bromide of potash, sponge baths, mild cathartics, milk diet, pil ferri. comp. during convalescence.	Oliver.	Previous health good. Highest pulse rate, 124; highest temperature, 103° 5′. Disease supervened on exposure to wet.
Apathetic look, deafness, moist, thick, yellowish coat on tongue, sordes on teeth, thirst, diaphoresis, tympanites, gurgling, rose spots at entrance, diarrhœa.	Sponge baths, astringents, bromide of potash, quinine.	Oliver.	Previous health good. Highest pulse rate, 84; highest temperature, 104°.
Loss of appetite, dull look, disturbed sleep, diaphoresis, dirty white coat on tongue, slight pain at epigastrium, tenderness in iliac fossæ, mild delirium.	Bromide of potash, milk and beef tea.	Oliver.	Previous health good. Highest pulse rate, 96; highest temperature, 100°.
Great exhaustion, disturbed sleep, cough, intense thirst, flushed face, smooth, dry tongue, afterwards moist and coated in patches, sordes on teeth, abdominal fullness and tenderness, gurgling in right iliac, rose spots on abdomen and thorax at entrance, sloughing over sacrum, delirium, involuntary dejections, diarrhœa, alternating with constipation.	Dover's powder, enemata, astringents, boiled milk, beef essence, tinct. ferri chlor.; later, quinine and porter, phosphates during convalescence.	Reynolds and Sinclair.	Previous health good. Pulse at entrance, 124, highest pulse rate, 144. Disease supervened after bathing. Large bed sores over hips and sacrum appeared early and remained long, greatly retarding convalescence.

(*Continued.*)

No. of Case.	Name and Occupation. Vol. and page of record.	Age.	When admitted.	Days ill before entrance.	Duration till convalescence or death	Result.	SYMPTOMS. Early.
138	J. M., American brakeman. Vol. 32, page 46.	22	Aug. 18	6	37 days.	Well.	Headache, chills, alternating with heat, anorexia, thirst, epistaxis, diarrhœa.
139	T. D., Irish currier. Vol. 32, page 58.	21	Aug. 20	7	32 days.	Well.	Chills, followed by heat, thirst, headache, abdominal tenderness, general muscular pains.
140	J. M., American school girl. Vol. 32, page 62.	11	Aug. 21	7	38 days.	Well.	Chilliness followed by heat, headache, thirst, pain in back, abdominal pain, diarrhœa.
141	W B., American matchesmaker. Vol. 32, page 128.	19	Sept. 3	3	37 days.	Well.	Vertigo, headache, chill, anorexia, nausea, epistaxis, tendency to diarrhœa.
142	M. M., Irish laborer. Vol. 32, page 146.	18	Sept. 8	14	28 days.	Well.	Headache, diarrhœa, chill, anorexia, malaise.
143	A. M., New Brunswick servant girl. Vol. 32, page 160.	18	Sept. 11	14	28 days.	Well.	Headache, chills, pain in ears and in joints, anorexia, exhaustion, vomiting, diarrhœa.
144	E. J., Irish servant girl. Vol. 32, page 180.	20	Sept. 19	7	21 days.	Well.	Chills, headache, pain in back and limbs, nausea, anorexia, vertigo.
145	M. J., Irish school girl. Vol. 32, page 196.	12	Sept. 24	7	23 days.	Dead.	Chilliness followed by heat, headache, pain in left chest, cough, diarrhœa.
146	J. T., American car-driver. Vol. 32, page 228.	21	Oct. 3	7	28 days.	Well.	Headache, stiffness of the neck, pain in back, pyrexia.

(*Continued.*)

SYMPTOMS. Advanced.	Treatment.	Name of Physician.	Remarks.
Apathetic look, confused intellect, flushed cheeks, hot and dry skin, dirty yellowish coat on tongue, abdominal pains, tympanites, gurgling, tenderness in right iliac, rose spots on abdomen at entrance, delirium.	Brandy, whiskey, milk, beef tea.	Reynolds.	Previous health good. Pulse 100 at entrance. On Aug. 2d had fallen to 60.
Loss of appetite, moist, heavy coat on tongue, afterwards dry and parched, disturbed sleep, scanty, high-colored urine, vesical irritation, tenderness in right iliac, rose spots on abdomen noted Aug. 28, constipation followed by diarrhœa, delirium.	Castor oil, fever mixture, Hoffman's anodyne, morphine suppositories, astringents, quinine, brandy, porter.	Reynolds.	Previous health generally good. Pulse 108 at entrance. Phlebitis developed itself sept. 14, at which time patient was apparently otherwise convalescent.
Apathetic look, hot and dry skin, tongue moist, red in centre, afterwards dry and glazed, anorexia, tenderness in iliac fossæ, diarrhœa.	Fever mixture, beef essence, brandy, astringents, quinine, tartrate of iron and potassa, milk diet.	Reynolds.	Previous health generally good. Pulse 112 at entrance; highest pulse rate 136. This patient had a slight relapse of fever during convalescence.
Anxious look, flushed cheeks, tongue moist, with brownish coat in centre, hot and dry skin, diarrhœa, vomiting, epistaxis, cough, sonorous rales, abdominal tenderness, nervous agitation, delirium.	Dover's powder, astringents, morphine suppositories, fl. ext. of spiroa, brandy, milk.	Reynolds.	Previous health good. Highest pulse rate 100; highest temperature 104°. Fever supervened on a change from country life to night work in a match factory in town.
Apathetic look, dry skin, brown tongue, sordes on teeth, anorexia, thirst, gurgling in right iliac, diarrhœa.	Milk, beef tea, brandy.	Reynolds.	Previous health generally good. Highest pulse rate 80; highest temperature 103° 8′.
Listless and anxious look, flushed cheeks, moist, thick white coat on tongue, disturbed sleep, diaphoresis, dry cough, diarrhœa.	Fever mixture, Dover's powder, demulcents, mild astringents, brandy, porter.	Reynolds.	Previous health generally good. Pulse 132 at entrance. Highest temperature 105° 5′. Complicated with bronchitis.
Dull expression, loss of appetite, thirst, disturbed sleep, moist, slightly coated tongue, profuse diaphoresis.	Fever mixture, Dover's powder, quinine.	Reynolds.	Previous health good. Highest pulse rate 108; highest temperature 105° 5′. Fever supervened after a season of unusually hard work.
Apathetic look, hot and dry skin, moist, loaded tongue, afterwards dry, brown and cracked, sordes on teeth and lips, urgent cough, hurried respiration, abundant, sonorous rales, rose spots on abdomen, extreme abdominal tenderness, bloody dejections, delirium.	Demulcents, morphine suppositories, milk, brandy, beef tea.	Reynolds.	Pulse 140; respiration 44; temperature 104° at entrance; highest pulse rat. 148; highest temperature 105° Disease supervened on exposure to cold and wet. Bronchitis existed as a complication.
Flushed cheeks, tongue dryish with thick white coat, sordes on teeth and lips, slight diarrhœa, restlessness, diaphoresis, insomnia, slight tenderness of abdomen, "a few rose colored spots" noted at entrance, active delirium.	Dover's powder, diluted sulphuric acid, gtt. xx. every 4 hours. Bromide of potassium.	Reynolds.	Previous health generally good. Pulse 104; patient slightly delirious at entrance Highest temperature, 103.

(*Continued.*)

No. of Case.	Name and Occupation. Vol. and page of record.	Age.	When admitted.	Days ill before entrance.	Duration till convalescence or death.	Result.	SYMPTOMS. Early.
147	J. M., Irish laborer. Vol. 32, page 248.	33	Oct. 9.	11	30 days.	Well.	Headache, pain in chest and throat, cough with rusty expectoration, pyrexia, general febrile symptoms.
148	D. G., American schoolboy. Vol. 32, page 250.	15	Oct. 11.	9	33 days.	Well.	Anorexia, headache, pain in back and abdomen, urgent thirst, general pyrexia, epistaxis.
149	J. M., N. Brunswick plasterer. Vol. 34, page 10.	20	Oct. 15.	6	9 days.	Dead.	Loss of appetite, urgent thirst, epistaxis, abdominal pains and tenderness, diarrhœa, pyrexia.
150	P. K., Irish laborer. Vol. 34, page 14.	21	Oct. 16.	10	33 days.	Well.	Sense of exhaustion, general malaise, anorexia, pain in chest, cough and expectoration, diarrhœa.
151	A. R., American servant girl. Vol. 36, page 176.	19	1869. Jan. 16.	21	35 days.	Well.	General muscular pains, anorexia, abdominal tenderness, diarrhœa.
152	D. G., Irish laborer. Vol. 36, page 200.	25	Jan. 23.	9	27 days.	Well.	General muscular pains, pyrexia, thirst, cough.

(*Continued.*)

SYMPTOMS. Advanced.	Treatment.	Name of Physician.	Remarks.
Drowsy depressed look, dulness of intellect, lividity of face dry, brown and fissured tongue, sordes on teeth and lips, cough with expectoration, sub-crepitant râles, tendency to diarrhœa, "some rose spots on abdomen and chest," noted at entrance.	Diluted sulph. acid gtt. xx. every four hours, quinine, brandy, ale, beef essence, milk.	Reynolds.	Previous health good; pulse 104; temperature 105° at entrance; highest pulse 120; highest temperature 106°. Pneumonia supervened during disease. Patient was apparently convalescent Oct. 28 (30th day), after which feverish symptoms again appear'd, accompanied with a large and painful abscess over inner aspect of left thigh which prolonged convalescence.
Apathetic look, hot skin, moist, whitish coat on tongue, afterwards dry and brownish at posterior half, a little sordes on teeth, mild delirium, general tenderness over abdomen, "a few rose-colored spots" noted at entrance, one bloody dejection, subsequent constipation.	Castor oil, dil. sulph. acid, sherry wine, milk, beef essence.	Reynolds.	Pulse at entrance 108; temperature 104° 5′; highest pulse rate 116; highest temperature 105° 5.
Marked prostration, apathetic look, hot and dry skin, dry and brown tongue, sordes on teeth and lips, fulness of abdomen, numerous rose spots on abdomen noted at entrance, insomnia, diarrhœa, contracted pupils, tendency to coma, sinking.	Dil. sulph. acid gtt. xx. every four hours, bromide of potassium, astringents, beef essence, boiled milk, brandy, ℥ss. every two hours, carb. of ammonia.	Reynolds.	Previous health good. Pulse 96; temperature 105° at entrance; pulse 116, temperature 106° on the 16th. Pulse 148, temperature 106° on the 17th.
Appearance of exhaustion, hot and dry skin, hurried respiration, cough with expectoration, dry and brown tongue, sordes on teeth and lips, fulness and tenderness of abdomen, delirium, rose spots on abdomen noted at entrance, diarrhœa.	Dil. sulph acid gtt. xx. every four hours, astringents, brandy, boiled milk, beef essence.	Reynolds.	Previous health good. Highest pulse rate 104; temperature 104° 5′. Patient was delirious for two nights before entrance.
Marked prostration, apathetic look, hot and dry skin, moist, pasty tongue, tenderness of abdomen, constipation.	Dover's powder, brandy, cit. of iron and quinine, milk, beef tea.	Sinclair.	Previous health good. Pulse 96; temperature 102° 5′ at entrance.
Sense of debility and exhaustion, epistaxis, headache, cough with expectoration, moderately hot skin, sordes on teeth and lips, thin white coat on tongue, afterwards dry and brown, gurgling in iliac fossæ, diarrhœa, delirium, subsultus tendinum, "some doubtful rose spots on thorax" noted Feb. 17th, dysuria.	Spts. nit. aetheris, cod-liver oil, brandy, milk, beef tea, quinine, opium suppositories.	Sinclair.	Previous health generally good; pulse 66 at entrance; highest pulse rate 112; highest temperature 106° 5′. Attacked after exposure to cold and wet. Patient was apparently convalescent Feb. 25th (42d day), after which he suffered from dysuria, with severe vesical irritation which prolonged convalescence.

The whole number of cases of typhoid fever here tabulated is 152. A few more cases could have been added, of the true nature of which there exists in my own mind but little doubt; but the details on record are too meagre to afford any absolute certainty as to their diagnosis. In the consideration and analysis of the table, I will take up the several points in the order in which they are stated.

The Sex. — Of the 152 cases, 86 were males, 65 were females; the sex of one, a child, was not stated.

The Nationality. — This was given in 150 cases. Of these, 69 were born in Ireland, 44 in America, 21 in the British Provinces, 7 in England, 5 in Germany, 3 in Sweden, and 1 in Scotland. Of those of foreign birth, seven were noted as having recently arrived in this country.

The Occupation. — This is recorded in the cases of 81 males and 60 females. Of the males there were 26 common laborers, 7 carpenters, 6 blacksmiths, 5 errand-boys, 3 school-boys, 3 teamsters, 2 seamen, 2 shoemakers, 2 tailors, 1 brakeman, 1 cabinet-maker, 1 car-driver, 1 carriage-trimmer, 1 clerk, 1 currier, 1 farmer, 1 hack-driver, 1 harness-maker, 1 hostler, 1 man-servant, 1 machinist, 1 matches-maker, 1 medical student, 1 oysterman, 1 painter, 1 plasterer, 1 porter, 1 salesman, 1 soldier, 1 shop-boy, 1 wire-roller, 1 watchmaker, and 1 varnisher. Of the females there were 39 servant-girls, 5 housekeepers, 3 school-girls, 3 seamstresses, 2 nurses, 2 cooks, 2 chambermaids, 2 shop-girls, 1 dressmaker and 1 mattress-maker.

The Age.—This was stated in 148 cases. The youngest patient, a school-girl, was 10; the oldest, a female nurse, 60 years of age.

There were of the age of 10 years	2 cases.
Between the ages of 10 and 20 years	43 cases.
Between the ages of 20 and 30 years	83 cases.
Between the ages of 30 and 40 years	12 cases.
Between the ages of 40 and 50 years	7 cases.
Between the ages of 50 and 60 years	0 cases.
Of the age of 60 years, 1 case.	

The average age of the males was $23\frac{5.2}{1\,0\,0}$ years, of the females $22\frac{2.1}{1\,0\,0}$ years, of both $22\frac{9.6}{1\,0\,0}$ years. Of the patients who recovered,—131 in all,—the age was stated in 128, of whom 71 were males and 57 were females; the average age of the males was $23\frac{6.5}{1\,0\,0}$, of the females, $21\frac{5.8}{1\,0\,0}$ years. Of the fatal cases—21 in all—the age was stated in 20, of whom 13 were males and 7 were females. The average age of the former was $22\frac{8.5}{1\,0\,0}$, of the latter $27\frac{2.8}{1\,0\,0}$ years; among the latter was the oldest in the series—a nurse aged 60,—if we deduct which, the average age of the six that remain will be $21\frac{2.3}{1\,0\,0}$ years.

The Season of the Year when Admitted.—Twenty-seven cases were admitted in the spring months, 35 in the summer, 74 in the autumn and 16 in winter. Of the fatal cases, 5 occurred in spring, 1 in summer, 13 in autumn and 2 in winter.

The Stage of the Fever at which the Patient was Admitted.—Here it is necessary to guard against the usual disposition on the part of

the patients or their friends, to reckon in even weeks. From an examination of the tables, it appears that 44 were admitted during the first week of the disease, 74 during the second week, 16 during the third week, and 12 during the fourth week, or subsequently; in six cases the time was not stated.

The Duration of the Disease.—In determining the duration of the fever, we have counted from the time of the first occurrence of lassitude, headache, malaise, inaptitude for mental and bodily exertion, or other manifestations of departure from the normal state of health, so far as it could be ascertained from the testimony of the patient or his friends. We believe that in this way we have arrived more nearly at the period of the actual invasion of the disease than if we had dated from the time that he "took to his bed." Of course we cannot pretend to absolute accuracy on this point. The disturbing elements, already alluded to under the preceding head, meet us here at the outset, viz., the dulness, incapacity, and ignorance of the patients themselves, or their friends, of whom the information is sought. The accession of the fever was for the most part insidious, but sometimes sudden and violent. In fixing upon the day of convalescence, we have been governed by an assemblage of circumstances and symptoms rather than the occurrence of any single sign or condition arbitrarily taken. If, on or about a certain day, it was observed that the temperature and pulse had sunk to nearly their normal standard, the tongue had cleaned, the skin become soft and natural, and

the appetite craved a return to solid and nourishing food, and if these conditions continued with a gradual amendment of strength and spirits, we felt confident in relying upon this as the period of the termination of the fever and the commencement of returning health. As thus obtained, the average duration of the cases which recovered was, for the males $32\frac{25}{100}$ days, for the females $36\frac{91}{100}$ days, for both $34\frac{25}{100}$ days. The duration of 17 of the 21 fatal cases was recorded. Of these 17 cases, 11 were males, 6 were females.

In two cases death took place on the 9th day, in one case on the 19th, in one case on the 20th, in two cases on the 23d, in one case on the 24th, in one case on the 25th, in one case on the 28th, in two cases on the 30th, in one case on the 32d, in one case on the 33d, in one case on the 36th, in one case on the 39th, in one case on the 48th, and in one case on the 100th day. This last was a patient with a scrofulous taint who had dislocation of the hip, and was worn out with exhausting discharges from excoriations and bed sores. The average duration of these fatal cases was for the males $30\frac{90}{100}$ days, for the females, $31\frac{50}{100}$, for both $31\frac{6}{100}$ days.* The duration of the period of convalescence has not been given in the tables. The hospital records, however, furnish the data for computing this in 115 cases, of which number 64 are males, and 51 are females. The average in the former is $15\frac{25}{100}$, in the latter $19\frac{31}{100}$ days,

* If the case of D. N., No. 32, be deducted, the average duration of the remaining 16 fatal cases would be $27\frac{44}{100}$ days.

in both $17\frac{5}{100}$ days. The duration of convalescence varied with the previous health and vigor of the patient, with the existence or non-existence of complications or sequelæ, and with the care and watchfulness exercised in the case on the part of the patient himself, and of the physician and nurses in attendance.

The Symptoms. — These are grouped according to the time of their appearance, whether in the earlier or later period of the fever. And I have thought it the more proper to make this division for the double purpose of presenting them in chronological order, and for the greater reliability which is thereby given to such as come into the advanced category, and are vouched for by the physician in attendance upon the case. Among the many and various symptoms noted in the early stages are chills mostly followed by heat, acceleration of the pulse, inaptitude for mental or bodily exertion, headache, pain in the back, limbs and joints, stiffness or soreness of the muscles, lassitude, general malaise, a sense of weakness and exhaustion, anorexia, thrist, insomnia, vertigo, tinnitus aurium, deafness, nausea, vomiting, cough, epistaxis, abdominal pains, tenderness, diarrhœa and constipation. The relative frequency of these symptoms as applicable to the foregoing series of cases may be seen by the following tabular statements: —

TABLE SHOWING THE RELATIVE FREQUENCY OF SOME OF THE MORE MARKED SYMPTOMS IN THE EARLY STAGES OF THE 131 CASES OF TYPHOID FEVER WHICH TERMINATED IN RECOVERY.

Noted in how many cases.	Early Symptoms.
82	Chills.
100	Headache.
51	Pains in back and limbs.
13	Stiffness or soreness of muscles.
39	Sense of fatigue, lassitude or malaise.
36	Weakness or exhaustion.
28	Vertigo.
3	Tinnitus aurium.
3	Deafness.
13	Insomnia.
35	Epistaxis.
23	Cough.
62	Anorexia.
19	Thirst.
21	Nausea.
27	Vomiting.
33	Abdominal pains.
51	Diarrhœa.
23	Constipation.

TABLE SHOWING THE RELATIVE FREQUENCY OF THE MORE PROMINENT AMONG THE EARLY SYMPTOMS IN 17 OF THE 21 FATAL CASES RECORDED IN THE FOREGOING SERIES:—

Noted in how many cases.	Early Symptoms.
12	Chills.
12	Headache.
10	Pain in back and limbs.
1	Soreness of muscles.
6	Lassitude and malaise.
2	Weakness & exhaustion.
2	Vertigo.
2	Tinnitus aurium.
2	Insomnia.
5	Epistaxis.
8	Cough.
6	Anorexia.
1	Thirst.
3	Nausea.
5	Vomiting.
3	Abdominal pains.
	Diarrhœa.
1	Constipation.
1	Delirium.
2	Tenderness.
1	Tympanites.

In four of the fatal cases the early symptoms are not stated.

It must be borne in mind that it is merely attempted to show here the comparative frequency of such symptoms as were sufficiently marked to attract the

attention of the patients or their friends early in the disease, in most instances before they had come under the observation of the hospital physician. It is only with this understanding that these figures can be of any interest or importance.

Prominent among the symptoms noted in the more advanced stages of the fever may be enumerated the following, viz: chills, headache, apathetic look, flushed face, hot and dry skin, rose spots, sudamina, insomnia, delirium, vertigo, tinnitus, deafness, epistaxis, cough, vomiting, brown and dry tongue, sordes, abdominal pains, tenderness, tympanites, gurgling in iliac fossae, diarrhœa, constipation, involuntary dejections, hemorrhage from the bowels, subsultus tendinum and coma-vigil, the relative frequency of which may be seen by the tables below: —

TABLE SHOWING THE RELATIVE FREQUENCY OF THE MORE PROMINENT SYMPTOMS OCCURRING IN THE ADVANCED STAGES OF THE 131 CASES OF TYPHOID FEVER WHICH TERMINATED IN RECOVERY.

Noted in how many cases.	Advanced Symptoms.
5	Chills.
33	Headache.
38	Dulness and apathy.
42	Flushed face.
54	Increased heat of surface.
22	Vertigo.
5	Tinnitus aurium.
13	Deafness.
22	Epistaxis.
20	Anorexia.
32	Thirst.
51	Cough.
18	Vomiting.
94	Rose spots.
12	Sudamina.
54	Insomnia.
40	Delirium.
28	Exhaustion.
39	Brown and dry tongue.
20	Sordes.
24	Abdominal pains.
82	Tenderness.
54	Tympanites.
43	Gurgling.
48	Diarrhœa.
63	Constipation.
2	Involuntary dejections.
2	Hemorrhage from bowels
3	Subsultus tendinum.
1	Coma-vigil.
1	Excoriation of sacrum.

TABLE SHOWING THE RELATIVE FREQUENCY OF THE MORE MARKED SYMPTOMS OCCURRING IN THE LATER STAGES OF THE 21 FATAL CASES OF TYPHOID FEVER NOTED IN THE FOREGOING SERIES:—

Noted in how many cases.	Advanced Symptoms.
1	Chills.
2	Headache.
6	Exhaustion.
8	Apathy.
7	Flushed face.
9	Hot skin.
1	Vertigo.
2	Deafness.
3	Epistaxis.
7	Cough.
1	Nausea.
4	Vomiting.
15	Rose spots.
2	Sudamina.
15	Brown and dry tongue.
12	Sordes.
6	Insomnia.
18	Delirium.
4	Abdominal pains.
15	Tenderness.
10	Tympanites.
7	Gurgling.
10	Diarrhœa.
3	Constipation.
9	Involuntary dejection.
6	Hemorrhage from bowels
8	Subsultus tendinum.
5	Coma.
2	Excoriation of sacrum.

It appears from the foregoing statements taken together, that chills, headache, anorexia, pain in the back and limbs, epistaxis, a sense of lassitude, exhaustion, abdominal pains and diarrhœa, were among the most constant of the early symptoms, being noted respectively in 94, 112, 68, 61, 45, 40, 38, 36 and 58 cases; while in the later stages the symptoms and phenomena more frequently observed were rose spots, abdominal tenderness, tympanites, gurgling in iliac fossae, constipation, diarrhœa, hot skin, delirium, insomnia, cough, brown and dry tongue, &c., these symptoms being noted in 109, 97, 64, 50, 66, 58, 63, 58, 60, 58 and 54 cases respectively. The comparative frequency of constipation, as noted both among the earlier and later symptoms in these tables, is at variance with our previously conceived notions and observations of this disease; indeed, from a closer review of the records, I am inclined to the belief that

in very many cases, absence from diarrhœa, or what would in most diseases be termed a normal quietude of the bowels, has here been put to the account of constipation. Naturally enough, such misapplication of terms might get upon the record in a fever where the expectation of the opposite symptom is so constantly present in the mind of the physician. I cannot otherwise explain the frequent mention of a symptom so much opposed to previous observation and experience.

It may be interesting, in this connection, to append a tabular statement showing in condensed form the relative frequency of these more prominent symptoms as noted *at some period of the disease*, in all the recorded cases, as follows: —

TABLE SHOWING THE RELATIVE FREQUENCY OF THE PROMINENT SYMPTOMS NOTED *AT SOME PERIOD OF THE FEVER* IN *ALL* THE CASES RECORDED IN THE PRECEDING SERIES.

Noted in cases	97	119	74	14	46	56	49	67	82	51	26	44	45	9	17	74	58	57	74	58	32	48	97	64	50	81	71	109	14	50	12	8	11	6	3
Symptoms.	Chills.	Headache.	Pain in back and limbs.	Muscular soreness.	Apathy.	Lassitude and malaise.	Flushed face.	Hot skin.	Anorexia.	Thirst.	Nausea.	Vomiting.	Vertigo.	Tinnitus.	Deafness.	Insomnia.	Delirium.	Epistaxis.	Cough.	Brown and dry tongue.	Sordes.	Abdominal pains.	Tenderness.	Tympanites.	Gurgling.	Diarrhœa.	Constipation.	Rose spots.	Sudamina.	Exhaustion.	Involuntary dejections.	Hemorrhage.	Subsultus.	Coma.	Excoriations.

I am by no means certain that in even a majority of the cases recorded in the clinical ward-books, all the important and characteristic symptoms of the disease

have been noted. I do not claim, therefore, for these numerical statements, anything more than a comparative exhibition of the facts and phenomena that most prominently arrested the attention of the physician in his morning round at the hospital. This visit is oftentimes necessarily a hurried one, and the number of patients allotted to his charge is always too great to allow, in the limited time at his command, a careful and minute examination and recording of individual cases. Indeed, if thoroughly accurate numerical results are ever to be looked for in the analysis of our hospital records, the allowance of professional observers, as well as of clinical clerks, must be largely increased.

The Result. — Of the 152 cases recorded in these tables, 131 recovered, and 21 died. Of the fatal cases, 13 were males, 8 were females, the mortality being in the ratio of 1 to $7\frac{2}{1}\frac{3}{0}\frac{}{0}$ cases. It is proper to add that four of these patients were insensible and in a well nigh hopeless condition when brought into the hospital.

Treatment. — This was mainly expectant, as will appear by the synopsis given in the tables. When an aperient was required, castor oil, alone or in emulsion with gum acacia, was commonly employed. Oftentimes a very small dose, from ʒi. to ʒii., was found to be sufficient to produce the desired effect. In cases attended with restlessness and insomnia eight to ten grains of Dover's powders, or $\frac{1}{8}$ of a grain of morphia (in the form of the officinal solution of the sulphate), for an adult, was administered at bedtime. A somewhat free use of the bromide of potas-

sium was also made for the purpose of quieting nervous irritability and inducing sleep, — and with reasonable success. Tepid or cool sponging was employed to reduce the temperature, and produce diaphoresis in patients having a dry and hot skin. A fever mixture, consisting of

Liq. Ammon. acetat. ʒii.
Mist. camphoræ } āā ℥ss.
Aquæ distill. }

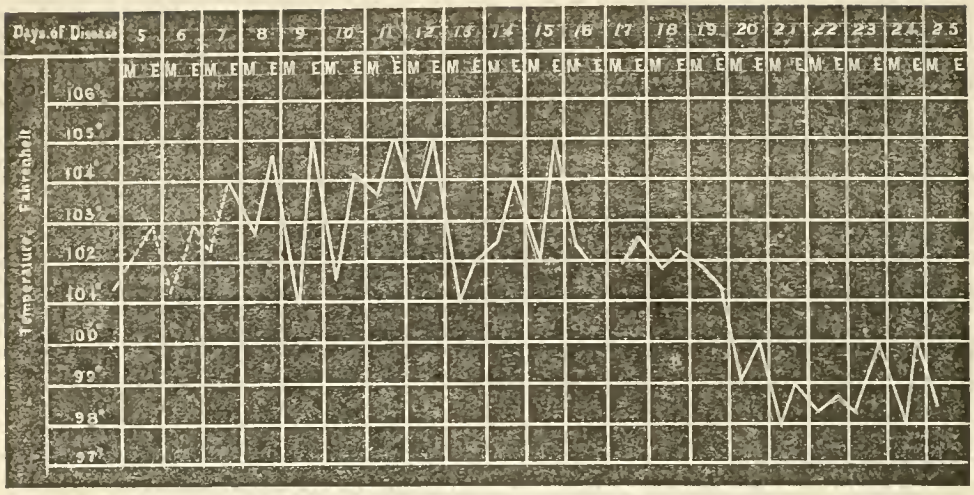
was added if the restlessness and fever was excessive. Camphor water or Hoffman's anodyne was given to allay wakefulness and nervous agitation. Occasionally the oil of turpentine was exhibited with marked benefit, in cases like those which have been described by Dr. George B. Wood, when, in the advanced stages of the disease, the tongue after cleaning partially becomes suddenly hard and dry, with increase of tympanites and aggravation of the other abdominal symptoms. In such condition eight to ten drops of the oil were administered, in emulsion with gum arabic and sugar, repeated at intervals of three or four hours, till the effect became manifest. Cold water, milk and water, and a weak infusion of flaxseed, were freely allowed as drinks. In the debility consequent upon the latter stages of the disease, or at whatever period of the fever depression and exhaustion of the vital power was manifest, recourse was had to tonics and stimulants, proportioned in amount and activity to the degree of prostration present. Beef-tea, wine-whey, brandy and whiskey, and the carbonate of ammonia were the stimulants used. The strictest

attention to the nature of the diet was enjoined throughout the whole course of the disease. None but mild and unirritating articles were allowed until convalescence was fully established; from this category the nutritious elements were by no means excluded. During convalescence quinine and the various combinations of iron and bark were used with gratifying success.

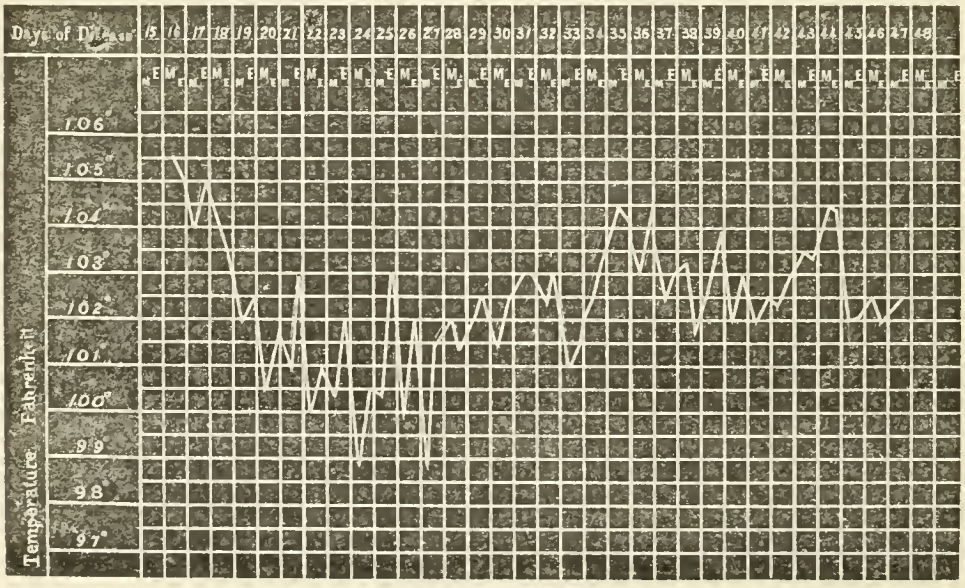
In the remarks appended to the abbreviated tabular history of the foregoing series of cases, the pulse rate and the temperature of the patient at the time of admission to the hospital is set down when such information is afforded by the records. The highest pulse rate and the highest temperature has also, in a considerable number of cases, been given. In 65 cases of recovery the average highest pulse rate was 108; in 14 fatal cases the average highest pulse rate 140. In 41 cases of recovery the average highest temperature was 104° 1′; in 6 fatal cases the average highest temperature was 105° 7′.

The daily variations of the temperature in two cases, one terminating in recovery, the other in death will appear in the following diagrams.

Case. I. (*No. 74 of the foregoing series*). A laboring man, æt. 21, — admitted Nov. 19, 1866, — had several days previously a general feeling of uneasiness and malaise, with headache, followed by dizziness, epistaxis, anorexia, vertigo, muscular pains; *later*, hot and dry skin, loaded and dry tongue, thirst, restlessness, tympanites, tenderness, gurgling, etc. Pulse varying from 76 to 96. Convalescence on the 25th day, — recovery.


Days of Disease
5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25
M E M E M E M E M E M E M E M E M E M E M E M E M E M E M E M E M E M E M E
Temperature, Fahrenheit
106°
105°
104°
103°
102°
101°
100°
99°
98°
97°

Case II. (*No.* 104 *of the Series.*) A servant girl, æt. 21, — admitted Sept. 30, 1867, — after several days ill-defined sense of uneasiness, depression and malaise had, five days before entrance, chills followed by heat, general muscular pains, headache, abdominal distress, constipation; *later*, flushed face, anorexia, cough, vomiting, diarrhœa, rose spots, dry and brown tongue, sordes, tenderness, pain at epigastrium, delirium, involuntary dejections, excoriations of the sacrum, hemorrhage from the bowels, — death in the sixth week.



The complications noted were pneumonia, which occurred in 11 cases, bronchitis in 7, incipient phthisis in 5, cerebro-spinal meningitis in 3, gastric irritation in 3, hysteria in 3, rheumatism in 2, pleurisy in 2, functional disease of the heart in 2, tonsillitis in 1, erysipelas in 1, pericarditis in 1, and vesical irritation with dysuria, in one case. The sequelæ recorded were furunculi in 4 cases, glandular inflammation and suppuration in 2 cases, abscess in 2 cases, and phlebitis in 1 case. The state of the general health prior to the attack of fever was recorded in 131 cases, of which 77 were males, and 54 were females. Of the 77 males 68 were reported to have been in good, and 9 in impaired health; of the 54 females 41 had been in good health, and 13 in poor health. Of the 21 fatal cases 11 were noted as having been in previous good health, and 4 in impaired health. The average time at which the rose spots were first seen, as gathered from the history of 65 cases in which this fact was particularly noted, was between the 12th and 13th days. It is quite likely the spots might, in many cases, have been seen earlier, if close attention had been directed to this point. Autopsies were obtained in five cases only. Of these a moderate degree of rigor mortis was noted in two cases; fibrinous coagula in the cavities of the heart, in two cases; hypostatic congestion of the lungs, in two cases; enlarged or softened spleen, in four cases; prominence of the mesenteric glands, in one case; ulceration of the large intestines, in four cases; and thickening and

ulceration of Peyers' patches in all the cases. In regard to the etiology of the fever not much light can be gathered from the records. Dr. Morland has, however, reported in extenso several cases of the disease (included in the preceding tables) which came under his care, in which he traces the origin of the fever to the presence of bad air, filth and insufficient drainage, to which all the patients in his group of cases had been exposed. This interesting report of Dr. Morland, may be found in the Boston Medical and Surgical journal, No. 13, Vol. LXXVII. In the great majority of the cases comprised in the preceding tabular series, however, the origin and cause of the fever is only a matter of conjecture.

We append to the succinct analysis of the tabular sketches above given, a detailed history of one or two cases included in the series, for the purpose more especially of consideration and comparison with the ordinary progress and phenomena of typhus fever, to which attention will be called in another part of this paper. The subjoined may be regarded as fair average examples of the fever seen in its moderately severe, and its fatal forms.

Case I. — (*No. 87 of the preceding series.*) M. T——, a woman, aged 34, living under favorable hygienic conditions, without known cause, after a few days of lassitude and general malaise, had pain in head, back and limbs, chills, anorexia, epistaxis, cough, loaded tongue, diarrhœa, tenderness and gurgling in iliac fossæ, rose spots on the 11th day, ten-

dency to stupor, gradual amendment, convalescence on the 30th day, tonsillitis a few days later,— recovery.

Previous history and condition. — This patient was a native of Nova Scotia, and by occupation a cook in a family in this city. Her previous health had been good, habits regular, no known hereditary tendency to disease. So far as known, the hygienic surroundings in which she lived were good.

Present attack. — Ten days before admission to hospital the patient had headache, with pain in back and limbs, accompanied with loss of appetite, and a sense of weakness and general malaise. She had subsequently chills followed by heat, and sometimes diaphoresis. Has had nausea, but no vomiting. Her bowels have inclined to be costive. This condition of things has continued without essential variation till now (March 4th, 1867), at which time she first came under observation at the hospital. Her general appearance indicates a moderately severe attack of fever. Patient complains of debility and great weakness, and pains throughout the whole body. Decubitus on the side. She has dizziness on rising. There is great tenderness in the right iliac region. The abdomen is soft and natural to the feel. The tongue is dry and thickly coated at base. No appetite; great thirst. Patient is restless and wakeful at night. Her urine is of dark color, and is passed with some difficulty. One dejection. Pulse 100; respiration 32; temperature 101°5′, at evening. To have

spts. mindereri ʒi. every 3 hours. Pulv. ipecac et opii. grs. x. at night.

March 5th. — Some dulness of expression, extreme tenderness over right iliac region. One or two rose spots are seen. Pulse 88; temperature 99°5', morning, 103°, evening. To have milk and water, flaxseed tea, mild farinaceous diet. Spts. mindereri p. r. n. Dover's powder repeated at night.

6th. — Increased headache, eyes somewhat suffused and sensitive to light, tinnitus aurium. Has had epistaxis and vomiting. Tongue more loaded, and somewhat swollen. There is pain throughout the back, a sense of soreness in the bowels, great tenderness over the right iliac region, tenderness and soreness also at epigastrium. Pulse 120, of moderate strength and volume. To have lime water and milk, sinapism to epigastrium.

℞. Liq. ammon. acetat.
Aquæ camph. āā ʒii. } once every three hours.

7th. — Some apathy of expression, intelligence good, great sense of exhaustion. The headache has diminished, pain in back and limbs continues, tongue moist, with thin milky white coat evenly diffused, less tenderness at epigastrium and right iliac region. Pulse 120, of moderate fulness, compressible; fever mixture to be continued, with milk and water in equal parts for drink. To have castor oil ʒiij in emulsion with mucilage of acacia.

8th. — Cephalalgia still continues. A little tendency

to stupor, but intelligence complete on being aroused; tongue as yesterday, cheeks flushed, tenderness and pain in right iliac, with some tympanites. Ten or twelve more rose spots have appeared. Pain at epigastrium still severe. Pulse 116, regular, soft, compressible. Five dejections from the oil of yesterday.

9th.—Less hebetude, intelligence good, tongue dry and brown in centre, skin dry, pulse 100, regular, soft, compressible. There is some pain on taking a full inspiration, less tenderness over right iliac region, gurgling. Wine whey ʒvi., in divided doses during the day.

10th.—General expression of exhaustion, conjunctivæ somewhat injected, no headache, slight flush on cheeks, tongue red and dryish in centre, coated at the sides. Tympanites, and gurgling in right iliac continues. There has been some cough during the night with expectoration of glairy mucus. Auscultation and percussion give no abnormal signs. To continue the wine whey.

11th.—Patient makes no complaint of pain, tongue covered with a yellowish white fur at base, redder than natural at tip and edges, abdomen less tender, no tympanites, pulse 116, regular, of moderate volume and strength.

12th.—General expression better, skin cool, moist, abdomen only slightly tympanitic, appetite beginning to improve, pulse 108, full and regular. May have chicken broth to-day at dinner.

13th.—No pain, tongue cleaning, moist, some cough, abdomen less tender on pressure, no tympan-

ites, one dejection since yesterday, pulse 92, regular, of moderate strength and volume. Patient slept well last night.

℞. Fl. ext. cubeb. ʒi. } cap. ʒi p. r. n. To have beef tea.
Syrup. tolu ʒi. }

14th.—Patient had yesterday afternoon a period of chilliness, followed by heat; slept but little during the night. Countenance this morning apathetic, and expressive of exhaustion. The cough has subsided. Tongue red, shiny, thickly coated in centre, inclining to dry; bowels more tender, some tympanites. There has been diarrhœa with numerous watery discharges attended with flatus, pulse 118, soft and compressible.

℞. Pulv. ip. et opii. gr. i. every hour till diarrhœa is checked.

℞. vin. oporto ʒ ss. every four hours. Omit the wine whey.

I find no notes of this case on the 15th.

16th.—Patient has had five dejections during the night, none this morning; no headache, skin cool and natural, tongue less dry and red, covered with a milky white coat in centre; only slight tympanites and tenderness of abdomen, pulse 96.

17th.—One dejection only since yesterday, tongue much the same as at previous visit, general condition of the patient improved; no pain, pulse 92. Asks for and may have soft boiled egg at dinner.

18th.—Condition still improving, tongue nearly normal in appearance; no pain, no tenderness on pressure over abdomen, but little tympanites, appetite improving. May have eggs, with cocoa or shells in the morning.

20th. — A little blood appeared in the dejection last night. No tenderness excepting over epigastrium, no tympanites; tongue nearly clean, pulse 92, regular. Turpentine stupe to abdomen.

℞. Pulv. ip. et opii. gr. i. { every hour till eight grains have been taken.

21st. — Two dejections since last visit, the first tinged with blood, the second natural. No pain, no tenderness, no tympanites; tongue clean and moist.

22d. — Tongue nearly clean and natural; no dejections since yesterday, no pain, no tenderness; pulse 68, soft, compressible. Port wine to be omitted. Patient began to convalesce from this time. On the 24th the pulse had fallen to 60, all symptoms favorable. Six days subsequently, during convalescence, the patient was attacked with soreness of the throat, accompanied by dysphagia, and stiffness of the muscles on the right side of the neck. On examination, the right tonsil was found to be swollen and covered with a whitish exudation. The pulse had risen to 120. A liniment of soap and opium was applied to right side of neck, and an application of a solution of permanganate of potash (grs. ii., in aquæ ℥ i.,) was made to the tonsil. The next day the pulse had receded to 96, the skin was again moist and natural, the tongue furred at base. There was great tenderness over the parotid region on the right side, and to a less extent, on the left, with excessive dysphagia. In a few days these symptoms disappeared, and the convalescence proceeded rapidly and without further hindrance, and on the 6th of April she was discharged, well.

Case II. — (*No. 81 of the tabular series.*) — A man, aged 23, born in England, a salesman by occupation, previous history not ascertained, cause and previous duration of fever unknown, delirious at entrance, severe epistaxis, hebetude, brown dry and caked tongue, rose spots at entrance, diarrhœa, weak and compressible pulse, involuntary dejections, jactitation, subsultus, carphologia; death on the 12th day after admission, — autopsy.

This patient was brought to the hospital May 10th, 1867. No reliable particulars of his previous condition could be obtained. At the time of admission he had profuse epistaxis, which could only be checked by plugging the posterior nares. The first notes of this case, taken May 11th, the day after admission to hospital, are as follows: Aspect of patient extremely pale, expression dull, apathetic, breath very offensive, tongue hard, dry, caked; abdomen flat, pulse 130; eight or ten doubtful looking rose spots are seen. On the 12th, his condition was as follows: Pulse 124, very weak, tongue dry, brown, almost black; gurgling in the iliac fossæ, delirium constant. To have brandy ʒviii. during the day, also carbonate of ammonia grs. v. four times a day. 13th. Delirium constant and increasing, subsultus tendinum, picking at the bed-clothes, pulse 130, very weak. Brandy and beef tea to be administered per rectum. 15th. Pulse 120, very weak; patient restless, inclining to coma. Picking at bed-clothes continues. On the 17th, his condition seems somewhat improved, which improvement was still more noticeable on the

18th. From that time onward he gradually sank, and died at 3 P. M., on the 22d.

Autopsy, — 19 hours after death, showed moderate emaciation, and some lividity of depending portions of the body. About a drachm of serum was found in each lateral ventricle of the brain, subarachnoid fluid inconsiderable, no turgidity of the cerebral veins; a rather slender, firm, fibrinous coagulum found in each side of the heart, the right side flaccid and containing but little fluid blood; two ounces of serum in the pericardium, some slight pleural adhesions. Intermingled with the healthier portions of the lungs was a pretty general deposit of miliary tubercle, mostly collected in small groups; there was some hypostatic congestion in the lower lobes, of which portions were friable, but crepitant. There was marked vascular injection of the internal surface of the cardiac pouch of the stomach. Peyers' patches large and distinct; superficial ulcerations of their mucous surface very marked in the vicinity of ileo-cœcal valve, but noticeable to the extent of nine feet above that point. A rather numerous group of whitish spots, quite small and ill-defined, looking like a circumscribed thinning and softening of the mucous membrane, in part showing traces of ulceration, were noticed in the upper part of the large intestine. The liver was rather pale, otherwise normal; gall bladder distended with a pale-yellow fluid; spleen rather soft, a little above the normal size, kidneys normal; the mesenteric glands reddened, but slightly, if at all enlarged.

No. of Case.	Name and Occupation. Vol. and page of record.	Age.	When admitted.	Days ill before entrance.	Duration till convalescence or death.	Result.	SYMPTOMS. Early.
1	M. A. T., American servant girl. Vol. 4, page 265.	13	1865. Sept. 14.	14	32 days.	Well.	Sudden seizure with headache, severe pains in back and limbs, also pain in epigastrium, anorexia, insomnia.
2	A. M., American school girl. Vol. 6, page 66.	9	Oct. 22.	6	16 days.	Well.	Sudden attack, anorexia, thirst, great heat of body, delirium, headache, general pains, &c.
3	G. G., Prussian machinist. Vol. 6, page 92.	21	Oct. 28.	4	19 days.	Well.	Headache, anorexia, constipation, vomiting, pains throughout body.
4	T. D., American newsboy. Vol. 5, page 276.	17	1866. Feb. 10.	Not definitely known.	In hosp. 8 days.	Dead.	Not stated.
5	J. Y., American hostler. Vol. 7, page 161.	36	Apr. 10.	7	15 days.	Well.	Attack sudden; chills, followed by heat, headache, pain throughout body, soreness of muscles.
6	D. M., Irish laborer. Vol. 7, page 124.	21	Apr. 3.	8	13 days.	Well.	Chills, nausea, vomiting, general malaise, dry cough, sibilant râles under clavicles, thick, yellowish coat on tongue, restlessness.

FEVER, TREATED IN THE BOSTON CITY HOSPITAL.

SYMPTOMS. Advanced.	Treatment.	Name of Physician.	Remarks.
Sense of great exhaustion, pain in bones and in epigastric region, anorexia, insomnia, natural and cool skin, pasty coat on tongue, some talkative delirium. On or about 6th day, according to patient's account, an eruption appeared covering the entire trunk and extremities, of bright red color, not elevated above the surface, which after a few days vanished. Constipation.	Fever mixture, simple enema, — milk and beef tea.	Reynolds.	Previous health good. Had been taking care of children "sick with fever," for two weeks before commencement of disease. Pulse 96 at entrance.
Flushed face, injected eyes, drowsiness, great heat of surface, dry and parched tongue, sordes, abdomen flat, tendency to constipation. On 26th was noted "slight petechiæ on many parts of body."	Fever mixture, enema, wine whey, whiskey, milk, beef tea.	Reynolds.	Previous health good. Patient lived in a dry locality, but there were six persons (old and young) "sick with fever" in the same house, four sick in the same room which the child occupied. Pulse 124 at entrance; highest pulse rate 132.
Flushed face, dry and hot skin, restlessness, moist, heavily loaded tongue, abdomen natural, profuse perspiration on 4th and 5th days, much nervous agitation, subsultus, delirium at night, constipation. On the 8th Nov. was noted "body covered with eruption of minute papules, of a dull red color becoming vesicular." Noted as "fading," on the 11th.	Fever mixture, morphia, p. r. n., enemata, whiskey, milk, and beef tea.	Reynolds.	Previous health good. Pulse 108 at entrance, — at no time higher.
Delirium, sordes on teeth and lips, pain in head, skin hot and dry, pulse weak and compressible, pungent heat of surface, contracted pupils, brown and dry tongue, abdomen shrunken, pain and gurgling in right iliac fossae, constipation, subsultus.	Dover's powder, fever mixture, enemata, flaxseed tea, ice, sponge bath daily, brandy, quinine, milk and beef tea ad libitum.	Upham.	Previous health generally good; hygienic conditions of life bad. Purpuric eruption manifested itself two days before death. Delirious throughout case. Pulse 112; temperature 105° 4′ the day after entrance; temperature had become nearly normal for two days before death. Highest pulse rate 124.
Hot and dry skin, tongue coated in centre, pulse occasionally intermittent, some tympanites and tenderness of abdomen, subsultus, abundant eruption on chest, arms, and abdomen, some fading on pressure and others not; first noted by patient on the 7th day of the disease, constipation.	Dover's powder, flaxseed tea, sweet spirits of nitre, sherry wine, ice, infus. cinchon. comp.	Morland.	Previous health good. Attacked after severe exposure. Pulse ranged from 68 to 108.
Light florid eruption over chest and arms at entrance, griping pains in abdomen, constipation.	Dover's powder, flaxseed tea, sweet spirits of nitre, sponge baths, castor oil, sherry wine, quinine.	Morland.	Previous health good. Patient left Steamer Etna one week before entering hospital; no fever on board ship. Pulse 88 at entrance, with but little variation. Abundant sweating on 14th day, with moist skin, diminished coat on tongue; eruption disappeared on the 8th, and convalescence began.

(*Continued.*)

No. of Case.	Name and Occupation. Vol. and page of record.	Age.	When admitted.	Days ill before entrance.	Duration till convalescence or death.	Result.	SYMPTOMS. Early.
7	W. S., Irish laborer. Vol. 7, page 126.	22	1866. April 4	9	22 days.	Well.	Epistaxis, delirium, cough, constipation.
8	E. S., Prince Edw'd Island servant maid. Vol. 8, page 82.	22	June 12	8	27 days.	Well.	Headache, muscular pains, slight diarrhœa, vomiting, hot and dry skin, insomnia.
9	C. B., Irish seamstress. Vol. 9, page 86.	37	June 25	14	21 days.	Well.	General malaise, "burning heats," constipation.
10	J. M., Irish boy. Vol. 9, page 78.	8	June 21	6	16 days.	Well.	Malaise, anorexia, headache, increased heat, abdominal pain, constipation.
11	P. M., Irish laborer. Vol. 9, page 82.	45	June 23	7	13 days.	Well.	Sudden attack, chill, headache, anorexia, thirst, sense of exhaustion.
12	M. D., Irish maid-servant. Vol. 9, page 94.	25	June 30	7	14 days.	Well.	Chills followed by heat, general malaise, anorexia, constipation.
13	A. M., Irish maid-servant. Vol. 9, page 102.	22	July 7	11	14 days.	Well.	Chill, pain at epigastrium, vomiting, insomnia, constipation.
14	E. B., American school girl. Vol. 9, page 113.	14	July 10	14	20 days.	Well.	Loss of appetite, pains in neck, knees and back, "flushes of heat," headache, "cramps in the stomach," constipation.

(*Continued.*)

SYMPTOMS. Advanced.	Treatment.	Name of Physician.	Remarks.
Dark purple eruption on chest and abdomen, noted at entrance, not fading on pressure brown, dry tongue, constipation.	Dover's powder, castor oil, flaxseed tea, broth, sherry wine, cod liver oil, quinine.	Morland.	Previous health good. Came from the same steamer as No. 7. Pulse full at entrance, ranged between 56 and 80. Spots disappeared on 18th day.
Apathetic face, dusky hue, suffused eyes, measles-like eruption scattered over abdomen, back and sides, at entrance, later on arms, legs, dry and cracked tongue, delirium, stupor.	Dover's powder, fever mixture, wine, quinine, cod-liver oil, brandy punch, demulcents.	Upham.	Previous health good. Patient lived in a very unhealthy locality; children in family were sick with "some kind of fever." Whole appearance of patient was characteristic of one suffering from typhus. Tedious convalescence from complication with ecthyma and rheumatic pains. Pulse 112 at ent'nce; highest pulse 128.
Tongue dry and red, constipation, eruption on abdomen at entrance, not fading on pressure, mild delirium.	Dover's powder, fever mixture, sponge baths, enemata, sherry wine, brandy substituted for wine after two days.	Morland.	Previous health good. This patient lived in an unfavorable locality, and worked hard upon poor food. She had three children "sick with fever." The pulse was 108, feeble, undulating, at time of entrance; highest pulse rate 116. She had a protracted convalescence.
Headache, somnolence, hot and dry skin, dry and loaded tongue, constipation, absence of other abdominal symptoms.	Fever mixture, castor oil, sponge baths, brandy.	Morland.	Previous health good. Pulse 108 at entrance, at no time higher. Child of cases Nos. 11 and 23, and brother of case No. 22.
Headache, hebetude, moist, slightly coated tongue, cough with expectoration, hot and dry skin, weak compressible pulse, slight diarrhœa, no tenderness, tympanites or gurgling.	Fever mixture, flaxseed tea, demulcents, sponge baths, brandy.	Morland.	Previous health good. Highest pulse rate 84. This patient was father of cases Nos. 10 and 22, and husband of case No. 23.
Flushed face, dry and coated tongue, moist, hot skin, dusky eruption on chest and abdomen at entrance, muscular tremors, constipation.	Castor oil, fever mixture, flaxseed tea, wine, quinine.	Morland.	Previous health good. Patient came from Ireland eight weeks before her present illness. There was no sickness on board ship. Pulse 76 at entrance; highest pulse rate 84.
Loss of appetite, sense of exhaustion, dusky hue of face, pungent skin, foul emanations from the surface, epigastric and abdominal pains, "a few spots on chest and abdomen not fading on pressure" noted at entrance, constipation.	Mild mercurial cathartic, milk, beef tea, wine, quinine.	Morland.	Previous health good. Pulse 80 at entrance. This patient had recently arrived from Glasgow. Convalescence was prolonged by gastric irritation, which existed as a complication.
Headache, whitish coat on tongue, afterwards red and dry, hot skin, restlessness, wandering delirium, pain at umbilicus, pains in feet and legs, an indistinct dusky eruption scattr'd over chest, arms and abdomen noted at entrance, constipation.	Fever mixture, flaxseed tea, Dover's powder, sponge baths, enemata, sherry wine, quinine.	Morland.	Previous health delicate. Pulse 92 at entrance; highest pulse rate 100.

(*Continued.*)

No. of Case.	Name and Occupation. Vol. and page of record.	Age.	When admitted.	Days ill before entrance.	Duration till convalescence or death.	Result.	SYMPTOMS. Early.
15	M. A. B., English maid servant. Vol. 9, page 125.	39	1866. July 20.	14	24 days.	Well.	Headache, pain in back and limbs, nausea, vomiting, "soreness at epigastrium."
16	J. F., Irish coffin-maker. Vol. 9, page 128.	49	July 20.	5	9 days.	Dead.	Chill, pain throughout the body, anorexia, nausea, vomiting.
17	J. C., Irish laborer. Vol. 10, page 13.	24	Mar. 23.	7	13 days.	Well.	Headache, general malaise, confused intellect, dusky hue of face, hot and dry skin.
18	E. C., Irish maid servant. Vol. 10, page 22.	20	Mar. 30.	7	22 days.	Well.	Cough, disturbed sleep, vague pains, difficult respiration, increased pulse, general malaise, slight diarrhœa.
19	E. H., American girl. Vol. 10, page 20.	14	Mar. 28.	14	22 days.	Well.	Headache, nausea, pain in chest, hot and dry skin.
20	W. McC., American errand boy. Vol. 10, page 100.	15	Apr. 26.	14	21 days.	Well.	Lassitude, hot and dry skin, soreness of muscles, chills, pain in back and limbs, pain at epigastrium, vomiting.
21	C. C., Irish maid servant. Vol. 10, page 248.	27	June 19.	7	22 days.	Well.	Headache, pain in back and legs, hot and dry skin, restlessness, anorexia, excessive thirst, prostration.

(*Continued.*)

SYMPTOMS. Advanced.	Treatment.	Name of Physician.	Remarks.
Deafness, brown and loaded tongue, maculated eruption over abdomen at entrance, regular bowels.	Fever mixture, camphor and hyoscyamus, sponge baths, sherry wine, brandy, carbonate of ammonia, tinct. cinch. et ferri.	Morland and Oliver.	Previous health good. Patient had attended a child "sick with fever." The mother of said child has since had fever. Highest pulse-rate 118. Lingering convalescence.
Pain in occipital region, dry tongue, weak and undulating pulse, oppressed breathing, general prostration, a dark eruption over abdomen, persistent under pressure, noted at entrance.	Castor oil, fever mixture, flaxseed tea, sponge baths, brandy, sherry, carbonate of ammonia.	Morland.	Previous health good. Pulse 96, and very feeble at entrance. The wife of this patient died of fever after an illness of two weeks. The wife's sister was admitted to hospital with typhus and recovered; see case 21.
Epistaxis, sub-livid countenance, dry and cracked tongue, sordes on teeth, hurried respiration, irregular and moderately full pulse, maculae over abdomen, chest, arms and legs, small in size, some disappearing under pressure, others not, foul emanations from body, coma.	Castor oil, Dover's powder, fever mixture, sherry wine, ʒ ss. every four hours, quinine, gr. ss. 6 t. d., morphia at night, milk diet.	Upham.	Patient came off emigrant vessel the day before complaining of disease. Had some slight sickness while aboard ship. Pulse 120, irregular at entrance, at no time higher. Patient partially comatose. Typhus spots first noted day after entrance.
Hot and dry skin, flushed face, deafness, stupor, abdomen full, tympanitic, gurgling in right iliac fossa, small distinct reddish eruption, persistent on pressure, profusely scattered over abdomen, thorax, and to some extent on extremities, noted April 1st.	Dover's powder, fever mixture, anodynes, wine whey, port wine, afterwards sherry, beef tea.	Blake.	Previous health good. Pulse 108, regular at entrance, 120 April 1st. Spots seen April 1st. April 7th sound sleep and profuse perspiration occurred, followed by apparent convalescence on the 8th. Subsequent relapse and convalescence established on the 14th. Tedious recovery. Highest pulse rate 128.
Suffused eyes, dusky face, hot skin, dry and brown tongue, delirium, subsultus, foul emanations from body, sordes on teeth and lips.	Flaxseed tea, demulcents, wine, broth, milk.	Upham and Blake.	Previous health good. The condition of this patient on admission was that of stupor and great prostration. Highest pulse rate 104.
Flushed face, dull look, thick, yellowish coat on tongue, dry and cracked lips, sordes on teeth, urgent thirst, slight tympanites, dark persistent eruption over body and extremities at entrance, contracted pupils, constipation.	Mild cathartics, fever mixture, milk, beef tea, wine whey.	Blake.	Previous health good. Pulse 100, respiration 32; temperature 101°, at entrance. Highest pulse-rate 100; highest temperature 103°
Suffused eyes, distressed countenance, loaded and dry tongue, pungent sensation of skin, great thirst, insomnia, dark purplish eruption on arms, abdomen and thorax, noted at entrance, later on legs; delirium, diarrhœa alternating with constipation, stupor	Sweet spirits of nitre, Hoffman's anodyne, beef tea, wine whey, sherry, brandy, quinine, phosphate of iron.	Blake and Reynolds.	Pulse 120 at entrance, at no time higher; respiration 40 at entrance. This patient came from the ship one week before commencement of her illness; a well marked crisis with profuse perspiration occurred July 4th, the date of commencing convalescence. Patient was retained in the hospital six weeks after the fever, for vague rheumatic pains,—sister to wife of case 16.

(*Continued.*)

No. of Case.	Name and Occupation. Vol. and page of record.	Age.	When admitted.	Days ill before entrance.	Duration till convalescence or death.	Result.	SYMPTOMS. Early.
22	D. M., Irish boy. Vol. 10, page 258.	Not stated.	June 21	6	20 days.	Well.	Sense of weakness in lower extremities, pain in back, vertigo, malaise, urgent thirst, pyrexia.
23	A. M., Irish housewife. Vol. 10, page 262.	38	June 22	6	10 days.	Dead.	Headache, pain in back, vertigo, general malaise, "weakness" in lower extremities, anorexia, constipation.
24	A. McB., Amer. girl. Vol. 10, page 270.	10	June 25	7	17 days.	Well.	Headache, pain in back, hot skin, anorexia, thirst.
25	M. B., American nurse. Vol. 12, page 28.	46	1866. July 9.	2	9 days.	Dead.	Headache, general malaise, feverishness, anorexia, thirst, constipation.
26	R. G., Irish laborer. Vol. 14, page 174.	22	Dec. 19	4	14 days.	Well.	Chill, headache, pain in bones, vertigo, cough, nausea, vomiting, anorexia.
27	E. C., American blacksmith. Vol. 13, page 34.	24	1867. Jan. 11	15	27 days.	Well.	Chills, headache, pain in back and limbs, vertigo, muscular pains, epistaxis, vomiting, slight diarrhœa.

(*Continued.*)

SYMPTOMS. Advanced.	Treatment.	Name of Physician.	Remarks.
Dull apathetic look, confusion of intellect, deafness, hot and dry skin, thirst, slightly coated tongue, sordes, an "eruption of numerous doubtful-looking spots on thorax and abdomen," noted June 22d, sudamina, some tenderness, constipation, delirium.	Hoffman's anodyne, fever mixture, beef tea, wine whey.	Blake.	Pulse 110 at entrance, at no time higher. Father, mother and brother in hospital sick with fever.
Hot and dry skin, clouded intellect, dry and loaded tongue, sordes on teeth, urgent thirst, tenderness, tympanites, gurgling, diarrhœa, doubtful looking spots on abdomen and thorax noted June 23d.	Hoffman's anodyne, fever mixture, beef tea, stimulants.	Blake.	Pulse 120; respiration 40 at entrance; highest pulse rate 134. This patient was the mother of cases 10 and 22, and wife of case 11. Post mortem not obtained.
Suffused eyes, flushed face, hebetude, hot and dry skin, great thirst, hurried respiration, pains throughout body, dusky eruption over thorax, abdomen and extremities noted June 27th, constipation, delirium, coma-vigil.	Enemata, Hoffman's anodyne, milk, beef tea, wine whey, quinine.	Blake.	Pulse 116; respiration 44 at entrance; highest pulse rate 136; highest temperature 104°. Three members of this family were sick with fever.
Excited and accelerated pulse, hot and dry skin, loaded tongue, cough, labored respiration, restlessness, occasional diarrhœa, great exhaustion, involuntary dejections, subsultus, July 12th a measles-like eruption appeared, scattered over thorax and abdomen.	Citrate of magnesia, Hoffman's anodyne, wine whey, brandy, milk punch, carbonate of ammonia, quinine.	Reynolds.	Pulse 132 two days after entrance, 144 the morning before death. This patient had charge of the fever patients in the hospital, and had overworked herself in the discharge of her duties.
Dull and apathetic look, obscured intellect, hot and dry skin, dry and loaded tongue, suffused eyes, sensitiveness to light, dusky hue of face, dark measles-like eruption over chest, shoulders, arms and legs, noted Dec. 20th, profuse diaphoresis, sordes, subsultus.	Dover's powder, fever mixture, milk, beef tea, wine whey, whiskey, quinine.	Upham.	Previous health good. Pulse 108; temperature 104° 5′ at entrance; highest pulse rate 112; highest temperature 104° 5′.
Headache, apathetic look, dusky hue of surface, hot and dry skin, brown, dry, fissured tongue, deafness, cough, labored breathing, pain in left chest, viscid expectoration, sudamina; dusky, ill-defined eruption not raised, fading but not disappearing under pressure, seen on abdomen, chest and shoulders at entrance.	Dover's powder, milk and lime water, sponge baths, wine whey, milk punch, quinine.	Borland.	Previous health good. Respiration 32, pulse 96, temperature 103° at entrance. Highest pulse rate 116; highest temperature 104°. Patient was attacked after exposure to a severe storm. Pneumonia involving the lower portion of both backs was present at time of entrance, and materially delayed convalescence.

(*Continued.*)

No. of Case.	Name and Occupation. Vol. and page of record.	Age.	When admitted.	Days ill before entrance.	Duration till convalescence or death.	Result.	SYMPTOMS. Early.
28	J. H., Irish blacksmith. Vol. 14, page 274.	19	Jan. 14.	5	15 days.	Dead.	Chill, followed by rigors and well-marked pyrexia, headache, pain in bones, back, and limbs, slight cough, general malaise, muscular debility, constipation.
29	L. M., American dentist. Vol. 13, page 99.	24	Feb. 1.	7	22 days.	Well.	Headache, pain in back, vertigo, constipation, pyrexia.
30	J. B., Irish maid-servant. Vol. 16, page 200.	27	Mar. 16.	5	13 days.	Well.	Headache, chills followed by heat, cough with expectoration, pain in eyes, weakness, debility, general malaise.
31	H. H., Irish maid-servant. Vol. 15, page 40.	25	Apr. 13.	7	15 days.	Well.	Chills, headache, slight epistaxis, anorexia, thirst, muscular pains.
32	J. M., Irish Male. (Occupation not stated.) Vol. 19, page 112.	Not stated.	Dec. 4.	7	13 days.	Dead.	Not stated.
33	M. M., Irish laborer. Vol. 24, page 36.	27	Dec. 24.	8	23 days.	Well.	Chills, followed by heat, dyspnæa, cough, anorexia, urgent thirst, constipation.

(*Continued.*)

SYMPTOMS. Advanced.	Treatment.	Name of Physician.	Remarks.
Suffused eyes, injected conjunctivæ, dry and caked tongue, sordes on teeth and lips, foul emanation from body, dusky hue of face, some gurgling, diarrhœa, delirium, sudamina, dark eruption over chest and abdomen, noted Jan. 15, coma-vigil.	Dover's powder, fever mixture, flaxseed tea, sponge baths, milk, brandy, carbonate of ammonia, morphia in small doses.	Upham.	Previous health good. Pulse 108 at entrance; highest pulse rate 160; highest temperature 104° 2′. Pneumonia involving lower half of right lung occurred as a complication. Post mortem not obtained.
Epistaxis, suffused eyes, deafness, wandering delirium, dusky red punctated eruption over body and extremities, fading, but not disappearing under pressure, noted at entrance.	Dover's powder, fever mixture, Hyoscyamus and camphor, bromide of potassium, demulcents, milk, wine whey, nitro-muriatic acid.	Borland.	Previous health generally good. Respiration, 40; temperature, 104° 5′. Pulse 122 at entrance; highest pulse rate 128; highest temperature 105°. This patient came by ship to Boston in the early part of January; knows of no fever on shipboard.
Suffused eyes, dusky appearance of face, deafness, tongue coated in centre, inclining to dry, sordes on teeth, hot skin, foul emanations from surface, mulberry colored eruption over abdomen, chest, arms, and back, at entrance.	Dover's powder, fever mixture, castor oil, demulcents, hyoscyamus and camphor, wine whey, quinine.	Upham.	Previous health good. Respiration 24; pulse 112 at entrance; highest pulse rate 120; highest temperature 104°, The fever supervened after exposure to cold and other depressing influences.
Flushed face, dusky hue, dull expression, dry and dirty brown tongue, sordes, parched lips, hot and dry skin, pungent to the feel, slight cough, hurried respiration, tenderness at epigastrium, tremulousness, slight diarrhœa, scanty high-colored urine, measles-like eruption, somewhat petechial, not fading on pressure, seen principally upon abdomen, and on chest near lower margin of thorax, at entrance.	Fever mixture, sponge baths, milk, beef tea, sherry, carbonate of ammonia, quinine.	Morland.	Previous health good. Pulse 120 at entrance, at no time higher. The attack was sudden and severe.
Hot and dry skin, dry and hard tongue, insomnia, expression of terror, wild delirium, coma-vigil, sunken abdomen, dark colored eruption over thorax, at entrance constipation.	Castor oil, milk, beef tea, brandy, carbonate of ammonia.	Borland.	Pulse 60, and intermittent at entrance; 116 two days before death. Patient refused all nourishment the first three days. Came from New York.*
Flushed face, headache, vertigo, cough with expectoration, moist, loaded tongue, pungent emanation from surface, "the whole body covered with a dark-colored eruption, imbedded in substance of the skin, and partially disappearing on pressure," noted on the 25th.	Castor oil, fever mixture, demulcents, Dover's powder, morphia.	Upham.	Previous health delicate. Case complicated with Phthisis. Pulse 112 at entrance; highest rate 116.

* The Autopsy showed well marked rigor mortis, a few old adhesions at posterior portion of left lung, slightly increased amount of serum in left pleural cavity; heart of full size, normal in texture, gall bladder distended, liver and spleen normal, lower portion of ileum congested. No other alterations noticed.

(*Continued*).

No. of Case.	Name and Occupation. Vol. and page of record.	Age.	When admitted.	Days ill before entrance.	Duration till convalescence or death.	Result.	SYMPTOMS. Early.
34	H. B., Prussian male (occupation not stated). Vol. 24, page 226.	Not stated.	1868. Feb. 13.	Not stated.	In hosp'l 3 days.	Dead.	Not definitely ascertained.
35	M. B., Nova Scotian sail-maker. Vol. 33, page 30.	37	Dec. 4.	6	11 days.	Dead.	Not stated.
36	M. P., Irish tailor. Vol. 36, page 280.	38	1869. Feb. 11.	7	14 days.	Dead.	Headache, epistaxis, marked pyrexia, cough, vomiting, slight diarrhœa, epigastric distress.
37	E. A. K., American nursery maid. Vol. 37, page 124.	16	Mar. 20.	7	14 days.	Well.	Headache, pyrexia, general muscular pains.
38	J. F., Irish housewife. Vol. 12, page 51.	45	1866. July 20.	14	14 days.	Dead.	Sudden attack, chills followed by heat, pain in back and legs, anorexia, &c.

(*Continued.*)

SYMPTOMS. Advanced.	Treatment.	Name of Physician.	Remarks.
Suffused eyes, dusky hue of face and of the general surface, swollen, dry, brown tongue, sordes on lips, foul emanation from the body, dark, purplish eruption over the trunk and extremities, petechial at entrance, constipation, delirium, coma vigil.	Castor oil, fever mixture, milk, egg-nog, brandy, carbonate of ammonia.	Upham.	This patient was nearly in a comatose state at entrance, no definite particulars of his history or the early state of the disease, could be gathered. Post mortem not obtained. Pulse 96 at entrance; highest pulse rate 120; temperature 102° 5′.
Lividity of face, extremities, sunken abdomen, constipation, dark-colored maculated eruption over abdomen, chest, and neck, noted Dec. 6th, the whole surface covered with small, thin scales.	Enemata, sponge baths, beef tea, brandy, carbonate of ammonia.	Borland.	Pulse 132 at entrance, 152 day before death; highest temperature 103° 5′; Patient was brought from a low, damp cellar, was semi-conscious on admission, but unable to give any account of himself.*
Headache, congested conjunctivæ, great prostration, delirium, dusky hue of surface generally, gurgling in iliac fossæ, dark-red maculated eruption over abdomen and upper portions of chest, persistent on pressure, noted at entrance, urine and fæces passed involuntarily.	Stimulating enemata, fever mixture, dilute hydrochloric acid, milk, beef tea, sherry wine.	Sinclair.	Previous health generally good. Pulse ranged between 92 and 120. Highest temperature 105°. This patient's wife had just recovered from typhus fever contracted on board an emigrant ship. Post-mortem not obtained.
Injected eyes, dry and parched tongue, deafness, diarrhœa, extremely fetid emanations from body, livid hue, dark maculated eruption scattered over the limbs and extremities, not disappearing on pressure, at entrance.	Sponge baths, dilute hydrochloric acid, bromide of potassium, astringents, milk, beef tea, brandy, quinine.	Borland.	Pulse 112; temperature 104.5 at entrance; highest pulse-rate 116; highest temperature 104° 5′. Patient in a semi-comatose state on admission. Was attacked with muscular pains and febrile symptoms the day after arrival from Liverpool. Says there were many sick on board, whether or not with fever cannot say.
Flushed face, anxious look, dilated pupils, coldness and lividity of surface, inability to protrude tongue, labored and irregular respiration, weak, compressible pulse, stupor, complete prostration.	Carbonate of ammonia, brandy, stimulating injections.	Blake.	This patient was comatose, indeed moribund, when brought in, and died six hours afterwards. Pulse 120 at entrance, exceedingly feeble; respiration 30. Wife of case No. 16, and sister of case No. 8.

* Autopsy — Showed rigor mortis, slight opacity of sub-arachnoid fluid, hypostatic congestion of lungs, heart filled with fluid blood, spleen enlarged, lower two feet of ileum congested. Peyers' patches congested, not ulcerated or thickened, large intestines healthy.

The number of cases of typhus fever, of which a tabular history is here given, is 38. Of these, 20 are males, 18 females.

Nationality. — Of the above 38 cases, 21 were born in Ireland, 12 in America, 2 in Germany, 1 in England, 1 in Nova Scotia, and 1 in Prince Edward Island. Seven were recently arrived emigrants.

The Occupation — is recorded in 35 cases, of which 17 were males, 18 were females. There were among the males, 6 common laborers, 2 blacksmiths, 2 errand boys, 1 coffin-maker, 1 hostler, 1 machinist, 1 dentist, 1 sail-maker, 1 tailor, 1 newsboy. Of the females, 10 were maid servants, 4 were school-girls, 1 was a seamstress, 2 housewifes, and one a nurse.

The Age. — This was stated in 35 cases, of which 17 were males and 18 females. The youngest was a boy of 8 years, the oldest a man of 49 years.

There were of the age of 10 years or under .	3 cases.
Between the ages of 10 and 20 years . .	8 cases.
Between the ages of 20 and 30 years . .	14 cases.
Between the ages of 30 and 40 years . .	6 cases.
Between the ages of 40 and 50 years . .	4 cases.

The average age of the males was $26\frac{41}{100}$ years; of the females, $24\frac{94}{100}$ of both, $25\frac{66}{100}$ years. Of the fatal cases, — 10 in all, — the age was stated in 8 cases, of which the average was $36\frac{12}{100}$ years.

Season when admitted. — Ten cases were admitted in the spring, 15 in the summer, 3 in the autumn and 10 in the winter. Of the fatal cases, 6 occurred in winter, 4 in summer.

Stage of the disease when admitted. — It appears that 22 patients were admitted during the first week, and 13 during the second week of the fever. In 3 cases the time is not given.

Duration of the disease. — In arriving at the duration of the fever, we have adopted the plan stated in the preceding history of typhoid, viz.: To measure from the first access of the premonitory symptoms manifested by languor, loss of appetite, headache, malaise, general muscular pains, debility, &c., as nearly as this could be ascertained, to the time at which convalescence was established, or death occurred. The onset of the disease was mostly sudden and severe; the approach of convalescence was well marked, and heralded by a decided relief and subsidence of the symptoms. It was sometimes accompanied with profuse diaphoresis. The average duration of the cases which recovered was, for the males, $18\frac{30}{100}$ days, for the females $19\frac{53}{100}$ days; for both, $18\frac{96}{100}$ days. The duration was recorded in 8 of the 10 fatal cases, of which five were males, and three females, — it being $12\frac{40}{100}$ days for the former, 11 days for the latter, and for both, $11\frac{88}{100}$ days.

Symptoms. — Among the early symptoms were loss of appetite, lassitude, chilliness, debility, headache, pain in back and limbs, soreness of the muscles, confusion of intellect, vertigo, nausea, vomiting, epigastric distress, increased heat of surface, thirst, insomnia, accelerated, moderately full, soft and compressible pulse, furred and loaded tongue, constipation, &c.; *later*, there was flushed face, hot

skin, suffused eyes, dusky hue of surface, general sensitiveness to the touch, a peculiar nauseous emanation from the body, a measles-like, florid or mulberry-colored eruption seen on the arms, chest, abdomen and legs, not infrequently on the sides and back, sometimes fading, sometimes persistent on pressure; dry, brown, fissured tongue, sordes, hurried and interrupted breathing, rapid and feeble pulse, violent delirium, exhaustion, subsultus and coma.

The relative frequency of the more marked of these symptoms, as noted in our series, in the earlier and later stages of the disease, will appear in the following tables: —

TABLE SHOWING THE RELATIVE FREQUENCY OF THE SYMPTOMS MORE COMMONLY NOTED IN THE EARLY STAGES OF 28 CASES OF TYPHUS FEVER WHICH TERMINATED IN RECOVERY.

Early Symptoms.	Chills.	Headache.	Pain in back and limbs.	Soreness of muscles.	Lassitude and malaise.	Debility.	Vertigo.	Epistaxis.	Cough.	Anorexia.	Thirst.	Nausea.	Vomiting.	Epigastric distress.	Increased heat of surface.	Insomnia.	Confusion of intellect.	Diarrhœa.	Constipation.
Noted in how many cases.	11	19	13	8	9	4	4	3	6	12	7	4	8	6	10	6	3	4	9

TABLE SHOWING THE RELATIVE FREQUENCY OF THE MORE MARKED AMONG THE EARLY SYMPTOMS, IN 6 OF THE 10 FATAL CASES OF THE SERIES.

Noted in how many cases.	Early Symptoms.
3	Chills.
4	Headache.
4	Pain in back and limbs.
	Soreness of muscles.
3	Lassitude and malaise.
2	Debility.
2	Vertigo.
	Epistaxis.
2	Cough.
4	Anorexia.
1	Thirst.
1	Nausea.
2	Vomiting.
	Epigastric distress.
1	Increased heat of surface.
	Insomnia.
	Confusion of Intellect.
	Diarrhœa.
3	Constipation.

In four of the fatal cases the early symptoms were not ascertained.

TABLE SHOWING THE RELATIVE FREQUENCY OF THE MORE PROMINENT SYMPTOMS OCCURRING IN THE ADVANCED STAGES OF 28 CASES OF TYPHUS FEVER WHICH TERMINATED IN RECOVERY.

Noted in how many cases.	Advanced Symptoms.
5	Headache.
2	Pain in bones.
9	Somnolence and Apathy.
7	Flushed face.
19	Hot skin.
9	Suffused eyes.
10	Dusky hue.
7	Foul odor of surface.
2	Anorexia.
4	Thirst.
3	Cough.
23	Mulberry colo'd eruption
3	Sudamina.
2	Diaphoresis.
18	Brown and dry tongue.
8	Sordes.
3	Abdominal pains.
3	Tenderness.
2	Gurgling.
3	Tympanites.
4	Insomnia.
13	Delirium.
4	Stupor.
2	Prostration.
5	Diarrhœa.
16	Constipation.
0	Involuntary dejections.
5	Subsultus.
1	Coma vigil.

TABLE SHOWING THE RELATIVE FREQUENCY OF THE MORE PROMINENT SYMPTOMS OCCURRING IN THE ADVANCED STAGES OF THE 10 FATAL CASES OF TYPHUS FEVER.

Noted in how many cases.	Advanced Symptoms.
3	Headache.
	Pain in bones.
	Somnolence and apathy.
1	Flushed face.
4	Hot skin.
3	Suffused eyes.
5	Dusky hue.
2	Foul odor of surface.
	Anorexia.
1	Thirst.
	Cough.
9	Mulberry colo'd eruption
	Sudamina.
	Diaphoresis.
3	Brown and dry tongue.
2	Sordes.
1	Abdominal pains.
2	Tenderness.
3	Gurgling.
2	Tympanites.
2	Insomnia.
6	Delirium.
7	Stupor.
9	Prostration.
1	Diarrhœa.
3	Constipation.
2	Involuntary dejections.
1	Subsultus.
3	Coma vigil.

From these tables it appears that chills, headache, pain in back and limbs, soreness of the muscles, lassitude, anorexia, vomiting, increased heat of surface and constipation, were the most common of the early symptoms observed, being noted respectively in 14, 23, 17, 8, 12, 16, 10, 11 and 12 of the 34 cases of recovery and death above given; and that, in the advanced stages, the symptoms more frequently noted were hot skin, suffused eyes, dusky hue, foul odor of the body, dark measles-like eruption, brown and dry tongue, sordes, delirium, stupor, exhaustion and constipation, being recorded in 23, 12, 15, 9, 33, 21, 10, 19, 11, 11 and 19 cases respectively.

I must here repeat what has already been said in substance in reference to the symptoms of typhoid fever, viz.: that, in the early stages especially, such symptoms only as were sufficiently marked to attract the attention of the patients or their friends were

recorded, while others of equal importance, perhaps, were likely to be omitted. And it must be borne in mind that the terms "early" and "advanced" are somewhat conventionally used. I doubt not that some of the phenomena found only in our category of advanced symptoms in typhus might have been sooner observed if attention had been directed that way; especially the appearance of the eruption, the suffused and injected eyes, flushed face, dusky hue of the surface, &c.

TABLE SHOWING THE COMPARATIVE FREQUENCY OF THE PROMINENT SYMPTOMS NOTED *AT SOME PERIOD OF THE FEVER* IN *ALL* THE TYPHUS CASES OF THE SERIES.

Symptoms.	Noted in how many cases.
Chills.	14
Headache.	24
Pains in back and limbs.	14
Dulness and apathy.	9
Muscular pains and soreness.	10
Lassitude and malaise.	12
Flushed face.	9
Hot skin.	24
Suffused eyes.	12
Dusky hue.	15
Foul odor of surface.	9
Anorexia.	12
Thirst.	10
Vertigo.	6
Nausea.	5
Vomiting.	10
Deafness.	7
Epistaxis.	4
Cough.	11
Hurried respiration.	9
Measles-like spots.	32
Sudamina.	3
Diaphoresis.	2
Dry and brown tongue.	21
Sordes.	10
Abdominal pains.	5
Tenderness.	5
Gurgling.	5
Tympanites.	5
Insomnia.	8
Delirium.	19
Somnolence or stupor.	8
Prostration.	10
Diarrhœa.	11
Constipation.	23
Involuntary dejections.	2
Subsultus.	6
Coma vigil.	4

As stated in a preceding page, these tables must be considered as only approximating to the exact results; I cannot suppose that all the prominent and characteristic symptoms in each case are to be found upon the records. They may be useful, however, in their partial accuracy, and will serve as a basis for future and more rigid observations. And the value of such future observations will, of course, be increased

precisely in proportion to the number and completeness of the recorded cases.

The Results. — Of the 38 cases here recorded, 28 recovered, and 10 died, showing the very large ratio of one death in $3\frac{80}{100}$ cases. One of these fatal cases was moribund when brought in, and died six hours afterwards. Three were delirious and unconscious at the time of admission, from which condition they did not rally. Another was a hospital nurse, 46 years old, excited and overworked, who contracted the disease while in attendance upon patients ill with the fever.

Treatment. — Pure air, cleanliness, and good nursing were deemed of the first importance. The diet was nourishing. Beef-tea, broths, tapioca, sago, soft-boiled rice, toast water, milk and water and infusion of flaxseed, constituted the principal food and drinks during the active stage of the fever. Mild cathartics and diaphoretics were employed as occasion required. Sponge baths were freely used in cases accompanied with the pungent burning heat of surface. Camphor was found useful in allaying nervous agitation. Morphia and Dover's powder were given in small doses, to procure sleep. Stimulants, in the shape of brandy, sherry, whiskey, beef essence and carbonate of ammonia, were all employed in their turn when required, and were sometimes called for, in judicious measure, when signs of adynamia or general exhaustion were present, throughout the whole course of the disease. The routine stimulant treatment was, however, not in vogue. A tonic and stimulant combined was thought to be sometimes beneficial; thus,

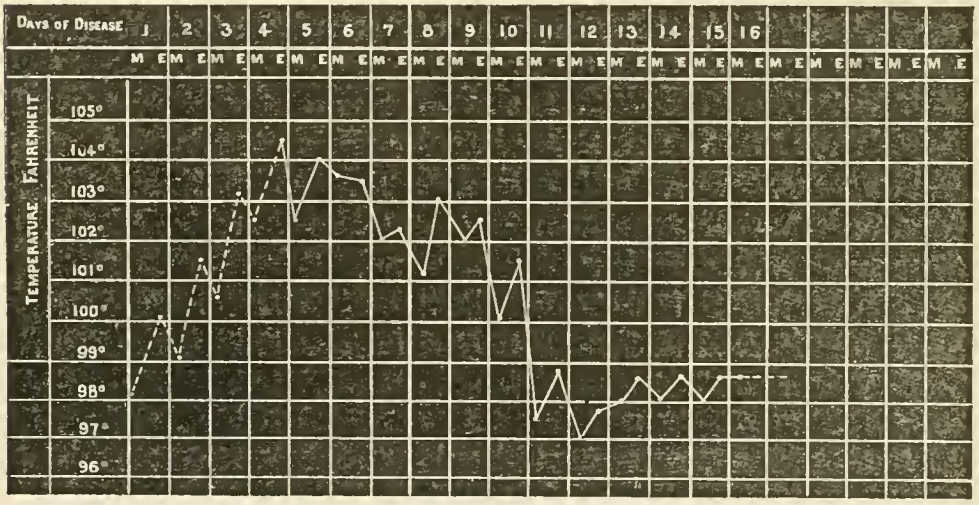
a mixture composed of sherry wine and the officinal solution of sulphate of quinine, in equal parts, was made of which ℥ss. was administered once in two hours in cases of much prostration. In the severe cases, whens ymptoms of prostration combined with nervous excitement were present, the "strong fever mixture" used in the London hospitals was exhibited, of which the following is the formula: —

℞. Ammoniæ sesquicarb. gr. v.
Camphoræ Mist. ℥i.ss.
} M. cap. ℥i. quâque 4tâ horâ.

In desperate cases, when the powers seemed to be sinking, stimulating injections, hot pediluvia, frictions to the spine, and sinapisms to the inside of the thigh and legs were ordered. During convalescence, ale and porter were recommended. Quinine, the compound infusion of cinchona, and some of the preparations of iron, were also employed in the recovering stage.

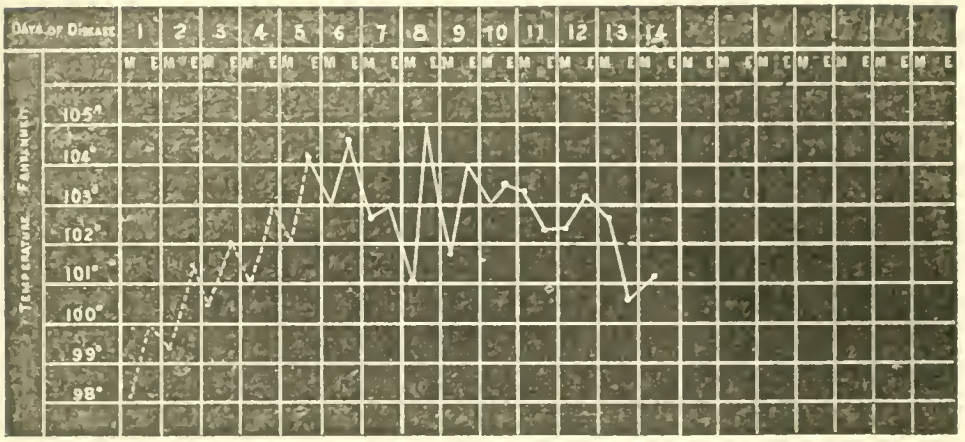
The state of the general health previous to the onset of the fever was noted in 27 cases, of which 15 were males, 12 were females. Of the 15 males, 14 were in good, 1 in impaired health; of the 12 females 11 were in good, 1 in impaired health. In 26 cases of recovery the average highest pulse rate was 111. In 9 fatal cases the average highest pulse rate was 132. The temperature was noted in twelve cases only. In 7 cases of recovery the average highest temperature was 104° 1′; in five fatal cases also it was 104° 1′. The following diagrams will show the daily thermometrical record in an average favorable and in a fatal case of the disease.

Case. I. (*No. 26 of our series.*) A laboring man æt. 22, admitted Dec. 19, 1866. Four days previously, chills, headache, pain in bones, vertigo, anorexia, nausea, vomiting, &c.; *later*, dull, apathetic look, obscured intellect, hot skin, pungent, peculiar odor of surface, dusky hue, sensitiveness, mulberry-colored eruption, dry and loaded tongue, sordes, soft and compressible pulse, subsultus, diaphoresis; convalescence on the 16th day,—recovery. The temperature was 104° 5′ at four P. M. on the day of entrance.


Days of Disease
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
M E M E M E M E M E M E M E M E M E M E M E M E M E M E M E M E M E M E M E M E
Temperature Fahrenheit
105°
104°
103°
102°
101°
100°
99°
98°
97°
96°

Case II.— (*No. 28 of the series.*) A blacksmith, æt. 19, admitted Jan. 14, 1867, — five days previously, had chills followed by heat, headache, pain in back and limbs, sense of weakness, constipation, &c.; *later*, suffused and injected eyes, dusky hue of face, dry and brown tongue, sordes, dark-colored eruption over chest and abdomen, foul emanations from the surface, prostration, delirium, coma vigil, — death on the 14th day.

The temperature was 104° 2′ at entrance.


Days of Disease
1 2 3 4 5 6 7 8 9 10 11 12 13 14
M E M E M E M E M E M E M E M E M E M E M E M E M E
Temperature Fahrenheit
105°
104°
103°
102°
101°
100°
99°
98°

The time of the first appearance of the rash does not appear to have been noted with sufficient accuracy to warrant any fair deductions on this point. The pathological appearances in the two cases examined, were characterized rather by the absence of any marked changes. The considerable rigor mortis, the lividity of the surface and hypostatic congestion in the depending parts of the body, and the fluid and disorganized state of the blood, were the main features in the morbid anatomy of these cases. The etiology of the disease in the cases under consideration, can be traced, by inference, at any rate, to contagion in several instances. Thirteen are recorded as having been previously more or less in communication with patients ill with fever, prior to their attack. In one instance, a group of three, and in another, a group of four cases, came from the same family. Seven had recently arrived in this country from Europe. The hygienic surroundings of four others are stated to have been notably bad. The complica-

tions and sequelæ were pneumonia in two cases, phthisis in one case, rheumatism in one case, ecthyma in one case, and gastric irritation in one case.

We present below the history of two cases, showing in detail the course and progress of the fever in its favorable and fatal aspects.

Case I. — (*No. 30 of the series.*) J. B. — a woman, æt. 27— without known cause, had for a day or two, a general feeling of uneasiness and malaise, then chills followed by heat, headache, pain in bones, sense of weakness and debility, anorexia, cough, suffused eyes, dusky hue of face, hot skin, dry and loaded tongue, sordes, measles-like, persistent eruption on the fifth day; subsultus, diaphoresis, slight bronchitis as a complication; convalescence on the 16th day, — recovery.

Previous history and condition. — The patient was of Irish birth, a domestic in the city and in favorable hygienic circumstances so far as could be learned, of good habits, with no known hereditary tendency to disease. Her previous health had been good.

Present attack. — Four days before admission to the hospital, after exposure to cold, the patient, having experienced for two or three days an indefinable sense of depression, uneasiness and malaise, was seized with chills succeeded by heat, severe headache, pain in calves of the legs, and a feeling of general exhaustion. She had slight cough, with expectoration of a tenacious whitish mucous. There

has been no epistaxis, or abdominal pain or tenderness.

March 16th, 1867. — Patient is now in bed: decubitus dorsal. Skin is hot, but moist; conjunctivæ injected, tongue covered with a slight coat in the centre, inclined to dryness; severe headache, anorexia, thirst; respiration 24, pulse 112. She has slept at intervals only, during the night. A light, measly-looking eruption is scattered over the trunk and upper extremities, noticed to-day for the first time: —

℞. Ext. Hyoscyamus, Pulv. Camph. āā grüs. F. pil. cap. h. s.

17th. — Patient has, this morning, severe frontal headache, injected eyes, a dusky hue of face, skin somewhat dry and hot, tongue uniformly covered with a milky-white fur; some cough, with expectoration of a glairy mucous; on auscultation an occasional râle only is heard; the sounds are otherwise normal; spots, of a florid, measly hue, are thickly scattered over the abdomen, chest, arms and back; none on face or legs; pulse, 116.

℞. Aq camph., Liq. ammon. acetat. āā ℥ii. Cap. every 4 hrs.

Cloths, dipped in camphor water, to be applied to head:

℞. pulv. ipecac. et opii. gr. x. — h. s.

18th. — Patient slept tolerably well last night, — awoke in perspiration; intelligence good, eyes suffused, skin hot and dry, pungent to the feel, a noticeable mousey emanation from the surface; tongue cov-

ered with a uniform, pasty, creamy white coat; some nervous agitation; slight cough, with tenacious white sputa; bowels constipated, a little tympanitic; no tenderness; the spots still manifest, about the size of a pin's head, fading; pulse, 120, soft, weak, compressible.

℞. Ol. ricini ℥ss. in emulsion with gum acacia: Sherry wine ℥iv. during the day: toast water: Dover's powder at night.

20th. — Intelligence good, eyes clearer; somewhat dusky hue of face; skin hot and dry; marked pungent and disagreeable emanation from the surface; cough, with bronchial râles; tongue covered with thick yellowish fur, inclining to be moist; sordes on teeth; abdomen flat, without pain or tenderness; spots fading, not wholly disappearing under pressure; pulse, 104, regular, soft, compressible; temperature, last evening, 103°; this morning at 8.30, A. M., 104°.

Increase the Sherry wine to ℥vi. daily.

On the 21st, — The temperature was 104° in the morning, 103° in the evening.

22d. — Eyes clear, less nervous agitation, tongue covered with thick, creamy, pasty coat at centre and base, red at edges and tip; pulse, 100, regular, of moderate strength and volume; temperature at evening, 100°; no dejection for three days.

To have Ol ricini ℥iii. statim —

23d. — General expression of the patient improved;

intelligence clear; there is still headache, some deafness; the cough, with bronchial râles, continues; tongue somewhat swollen, with yellowish, pasty fur over centre and base, moist at edges and tip; the odor from the surface subsiding; pulse 88, regular, of moderate strength and volume; temperature this morning, 98°5′; last evening, 101°5′.

24th. — No headache; face expresses exhaustion; cough continues; skin moist, natural; tongue moist, covered with a uniform pasty coat; pulse 96, of moderate volume, regular, compressible; temperature, 98°5′.

25th. — Less exhaustion; skin cool to the feel; tongue moist, clean at edges and tip; temperature 98°.

27th. — Expression better; skin moist and cool; tongue cleaning from edges and tip; pulse 88, regular, compressible, of moderate volume.

℞. quinine sulph. gr. ii.
Sherry Wine. — ʒii. } To be taken during the day.

28th. — Expression good, eyes clear, tongue nearly natural; pulse 72, regular, soft, compressible, of moderate strength; appetite returning; the patient is manifestly convalescent.

From this time the recovery was rapid, and without drawback or hindrance. On the 5th of April the patient was up and about the ward, and on the 10th was discharged, well.

Case II. — The following case was brought into the Hospital, in a semi-comatose state, on the 4th of

December, 1868. It was that of a man 37 years old, a Nova Scotian by birth, and by occupation a sail-maker. He had been living in a low, damp cellar, — was reported to have been ill six days. No further history of his case could be obtained. He lay in a speechless condition. The pupils were natural; his tongue was protruded with difficulty, and was hard and dry; skin natural, respiration 32; pulse 132, small and weak. The next day (Dec. 5th), the patient was conscious, but unable to speak; abdomen flat; pulse 124, respiration 32, temperature 103°5′; he had had convulsions of a chlonic character, confined principally to the upper extremities. He was given beef tea, ad libitum: —

Brandy ℥i. every two hours.

On the 6th. — The pulse was 124, respiration 28, temperature 99°5′. A maculated eruption was scattered over the abdomen, chest and shoulders.

On the 7th. — The tongue became moist; the bowels were moved by enema; the patient took food regularly and seemed to be much improved; his pulse was 120; temperature, 102°.

On the 8th. — This condition of things continued. On the 9th, the pulse had risen to 152; the patient was completely in sensible; hisrespiration was labored and thoracic. He soon became comatose, and at 12 o'clock, M., died.

On post mortem examination (24 hours after death), the rigor-mortis was marked; there was much hypostatic congestion of the body and of the depending

portion of the lungs. The brain showed nothing abnormal, with the exception of a slight opacity of the sub-arachnoid fluid, as seen through the membranes, and an unusual amount, perhaps, of the cerebro-spinal fluid; the lungs were healthy throughout, with the exception of a generally congested and friable condition of the posterior portion of the lower lobes. The heart was pale, otherwise normal in appearance; small, pale clots were found in the left cavities; the blood was copious in amount, very fluid, not dark; liver normal; spleen enlarged to about double its natural size, apparently normal in consistency; the lower two feet of the small intestines were congested; Pyer's patches in the lower six feet of ileum were somewhat congested, but not ulcerated or thickened; large intestines healthy.

Such, in brief, is the history, and such the results which the records of the Hospital have furnished on the subject of fevers in the first five years of its existence. If the materials are in themselves too meagre, and their treatment inadequate, to establish any positive conclusions, it is hoped they may serve, at least, to stimulate a nicer and minuter record of facts and observations of fever at the bedside, and a more satisfactory generalization of such facts in the future volumes of these Reports.

ARTICLE VIII.

REPRODUCTION OF THE TIBIA.

BY DAVID W. CHEEVER.

CASE I.—Excision of the entire diaphysis and the lower epiphysis of the tibia from a girl of 13 years, for suppurative periostitis; followed by regeneration of the bone, and a useful limb.

July, 1868.—M.F.M., aged 13 years, after passing successively through scarlet fever and measles, was left reduced and feeble, and in April last, three and a half months ago, she began to experience constant and excessive pain in the right leg. Soon a spontaneous opening occurred, giving exit to thin pus. The disease went on, other openings formed, and the child became much exhausted. On her admission to the Hospital the entire length of the tibia was riddled with sinuses, seven or eight in number, and all leading to denuded bone.

Under ether, an incision was made over the crest of the tibia, from the tubercle of the ligamentum patellæ to the ankle-joint. The entire shaft of the bone was found bare of periosteum, smooth, white, and dead. A red and thick periosteal membrane lay on either

side, and was attached only to a ridge on the posterior surface of the tibia. Even from this it was separated by the handle of the scalpel. A chain-saw was passed under the upper part of the tibia, and the bone sawed just below the junction of the upper epiphysis and the shaft. On raising the shaft from its periosteal bed, it was now found that the lowest sinus penetrated the ankle-joint, and that the lower articular surface of the tibia was seriously eroded and diseased. The internal lateral ligament was divided, the capsular ligament cut across subcutaneously, and the bone dissected out from its attachment to the fibula and the astragalus. Both the latter bones were found healthy. The ankle-joint was thus freely opened. No vessels required ligature, the hemorrhage being checked with ice-water. The thickened periosteum lined the entire wound, which was left open to granulate.

The leg was laid on its outer side, in a tin splint; and the wound kept wet with liq. sodæ chlorinatæ, diluted with five parts of water.

The entire length of tibia removed was *nine* inches.

On the second day, suppuration began, and healthy granulation soon followed. The patient's condition was eminently satisfactory, the shock from the operation being trivial, and the relief from the removal of the diseased bone, marked.

On the seventh day, the granulations were becoming so exuberant that the sides of the wound were approximated by adhesive strips.

On the eighteenth day, new bone could be traced beneath the whole line of granulations, feeling, under the finger, as thin ice does when we put the foot on it to test its thickness. The new growth of bone kept pace with the healing process, so that, when after eight weeks the wound had entirely closed over, the new shaft had acquired considerable firmness, and there was also mobility in the ankle-joint.

It was not until five months after the operation that the patient was allowed to put the foot to the ground, and then an apparatus was applied. This had a two-fold object; to lengthen the limb and evert the foot.

The leg was three-fourths of an inch shorter than its fellow on the inside, and one-half an inch on the outside, and the ankle and foot inclined to the position of talipes varus. A curious change had taken place in the fibula, one which Ollier says always follows excision of the diaphysis of the tibia.

The fibula was dislocated from its articulation with the upper end of the tibia, and drawn upwards, so that the head and styloid process of the fibula were one-half inch nearer the anterior superior spine of the ilium, than in the other leg. This change was due to the contraction of both the flexor and extensor muscles, without any resistance from the shaft of the tibia, the main column of support. The oblique articulation of the upper end of the fibula also favors dislocation upwards.

REGENERATION OF TIBIA.

New Eng. Lith Co 109 Summer St Boston

It is now eight months since the operation, and improvement has been uninterrupted. An apparatus, made by Dr. Nathaniel Greene, 1 Hamilton Place, Boston, combines the long Sayre's splint with Scarpa's shoe. This is kept firmly applied, and with it, the patient now begins to walk. The new bone is as wide as the old one above for a space of four inches, and about as firm. Below, it tapers down and becomes more flexible. There is a fair mobility in the ankle-joint. The sole comes squarely to the ground, and the foot is turning out.

There seems to be no reason to doubt that a perfect restoration will be effected, and a most useful limb result. There never has been any trouble from the ankle joint. The patient is growing tall and strong, and moves about continually.

The accompanying engraving is from a Photograph taken nine months after the operation.

Case II. — (*Service of Dr. Buckingham.*) The patient, a girl of eight years, had suppurative periostitis, and denudation of the diaphysis of the tibia. About five inches of the shaft were dissected out, and the extremities cut through with the chain-saw. Recovery was excellent and continuous. A good limb resulted.

A *third* case, operated on by our late colleague, Dr. F. C. Ropes, is still in the Hospital. The *diaphysis* of the tibia was removed four months ago. The wound has closed, and the new bone is getting firm. The leg is shortened, and there is dislocation of the fibula, as in the other cases.

That removals of the diaphysis, and especially both diaphysis and lower epiphysis of the tibia, are rare, is proved by the small number of cases, *five* in all, collected by Ollier, of Lyons, in his great work on the "Regeneration of Bone." *

These cases are so interesting, that we extract from them at some length.

"We find the most remarkable and most complete reproduction of bone in the tibia. Without recurring to older observers, we shall confine ourselves to the cases in which sub-periosteal operations have been done methodically and designedly. We find various examples of affections of different kinds, which have required operation. Larghi and Creus-y-Manzo have operated for chronic ostitis; Langenbeck and Neudörfer for compound fractures; Jambon and Aubert, Holmes and Lentenneur for acute periostitis.

"OBSERVATION XXX. — Sub periosteal resection of four inches of the lower end of the tibia for suppurative ostitis, with separation of the epiphysis and invasion of the ankle-joint, by Jambon and Aubert, of Mâcon. Excellent reproduction of bone, and perfect restoration of the functions of the limb.

"Michael Duvert, 21 years old, had numerous fistulous openings on either side of the leg, giving exit to an abundant suppuration, with severe pain, fever

* Traité Experimentale et Clinique de la Régénération des Os, et de la production artificielle du Tissue Osseux. Par. L. Ollier, Chirurgien en Chef de l'Hotel-Dieu de Lyon. Tome Second. Partie Clinique. Paris: Victor Masson et Fils. 1867.

and vigilance. Having been chloroformed, a primary incision along the fibula assured the operator that this bone could be saved. The diseased portion of the tibia was freely uncovered, and the bone divided by a chain-saw four inches above the ankle-joint.

"The inflamed and thickened periosteum was easily detached throughout. The bone carious in its entire diameter, broke into two fragments, of which the lower, representing the epiphysis, was detached with some difficulty from the bones of the tarsus, which were found quite healthy. The consequences of the operation were very fortunate.

"After a free suppuration, the edges of the wound united by granulations, starting from the bottom. In less than two months the sinuses were closed, and a firm resistance, under pressure, was felt. Under the use of tonics and a full diet, the bony repair proceeded rapidly. In less than six months he walked with the aid of one cane, and in ten months he was discharged.

"Four years having passed, the young man has worked constantly at his trade of shoe-making; his gait is easy, and he often walks twenty miles a day. Although there is shortening, there is no deformity. The portion of tibia removed has been entirely reproduced; a slight projection corresponds to the malleolus.

"This operation cannot be classed among removals of a sequestrum. There was no movable bony fragment. The diaphysis had to be sawn, and the epiphysis adhered to the fibrous tissues which are inserted into it in the normal state.

"Observation xxxi. — Suppurative periostitis of the whole diaphysis of the tibia, with grave constitutional symptoms. Extraction of the diaphysis before the reössification of the periosteal sheath; by T. Holmes, of London. Recovery, — renewal of bone, — shortening of the limb.

"The patient was 10 years old. Under chloroform it was found that the tibia was denuded above, below and behind, at every point that the finger could reach. A long incision having been made over the tibia, separation of the periosteum from the posterior border was easily accomplished by a sound guided by the finger. The chain-saw passed under the tibia divided it near its upper extremity; the section, seized with strong forceps, was detached from the upper epiphysis. The same manœuvre was repeated for the lower end. Thus the entire diaphysis was removed, measuring seven and one-third inches. The limb was placed in a fracture-box. Six weeks later, when consolidation was already advanced, shortening was observed. It was then seen that the head of the fibula was unusually prominent. Efforts to lengthen the limb were made without avail. After six months he was exhibited to the Medical Society, in perfect health, with the limb solid and inflexible. The tibia was replaced by a bony mass of the same form, though thicker, and less regular. There was an inch and a half of shortening. He walked well with a cane.

"Observation xxxii. — Suppurative periostitis of the diaphysis of the tibia, with severe constitu-

tional symptoms. Removal of the whole diaphysis by Lentenneur. Recovery.

"The patient was 12 years old. Denudation of the tibia the whole length of the shaft. Articulations healthy. Operation the 8th of August. Incisions above and below, the middle third of the skin being left untouched. By a to-and-fro movement the whole diaphysis was extracted. The periosteum was thickened. By the end of September there was ossification under the edges of the incisions above and below; no repair in the middle, where the skin was uncut. Marked shortening of the limb, and partial dislocation of the head of the fibula. In the month of March following, the upper and lower cicatrices were united by an incision, and the periosteum found reduced to a little fibrous cord. This was incised, and gouged, and a seton inserted. Having been retained three weeks, this restored the osteogenic properties of the periosteum, and the upper and lower spurs of bone lengthened and approached each other. At this time the child left the Hospital.

"Observation xxxiii. — Sub-periosteal resection of the diaphysis of the tibia for chronic ostitis, to an extent of eight inches, by Larghi. Regeneration of the entire fragment removed.

"John S., 12 years of age, from Refrancore, operated upon Dec. 4th, 1853, discharged April 30th, 1854.

"*Operation.* — The numerous openings from the bone to the skin are clear indications of the extent of the evil which affects this bone; it is actually rid-

dled. Below, the sinuses were very near the joint. However, it was found that the disease did not penetrate into the tibio-tarsal joint. The tibia is affected throughout its entire length; the disease appeared to stop at the epiphyses, which often have a separate vitality from the rest of the bone. The mode of operation was very simple, a straight incision being made over the tibia, from one end to the other, and down to the bone. Two transverse incisions, through the skin only, were made above and below.

"On examining the lower part of the tibia it appeared entirely eroded. Experiencing some difficulty in introducing the chain-saw, I cut away the bone with bone-forceps. The upper part was quite isolated, and removed with the chain-saw. Before commencing the resection, I pushed back the periosteum below the ligaments of the ankle, and preserved it entire, without wounding either tendon or nerve. The periosteum was thickened and red.

"Four months and a half after the operation, the condition was as follows: the patient was up and moving on the diseased limb. The new tibia was quite hard in its upper three-fourths. The lower fourth, at first soft and flexible, had become firm and unyielding. The new tibia was regular in form, and larger above, than the old one. The patient left the Hospital two weeks later.

"Observation xxxiv. — Ulcerative ostitis of the tibia. Subperiosteal resection of the entire diaphysis, by Creus y Manso, of Grenada. Complete

regeneration of the part removed. Slow recovery, with restoration of the functions of the limb.

"The patient, a boy of fifteen years, entered the Hospital on the 10th of April, 1861, for an acute inflammation of the tibia, with numerous sinuses. Operation on the 10th of June. A long incision was made, parallel to the crest of the tibia, from the tuberosity to within an inch and a half of the ankle-joint, — a transverse incision, through the skin, at each extremity. The dissection between the bone and the periosteum was made with the handle of the scalpel. Having reached the posterior edge of the bone, a curved director was passed beneath it, and the chain-saw used. The entire diaphysis was removed. The epiphyses were sound. The wound was bordered by periosteum. There was no hemorrhage. The portion removed measured seven and a half inches.

"On the 20th, the limb was somewhat stiffened, and examination showed that the work of regeneration had begun.

"The 2d of September, the lower wound was completely cicatrized, and at this point the union of the new bone with the old was complete. It was not so with the upper part, where a sequestrum of old bone was removed, at this date. It was two years before restoration was perfect.

"Since the final result of these extensive suppurations beneath the periosteum is the necrosis of the bone, the operation done in such cases may resemble the simple extraction of a sequestrum; everything

will depend upon the time of interference. If we operate early, while the bone is yet alive and vascular, while the periosteum is still adherent to a portion of the surface, we make, in truth, a resection; but if we wait until the diaphysis is isolated on every side, and holds only by weak medullary adhesions, near its extremities, we do nothing but remove a sequestrum.

"It might be asked, whether it were not better to wait until the periosteal ossifications were advanced. We have already recommended expectation for the diapheses, as long as the *joints* are not invaded. It is to arrest suppuration, and dépôts of pus, and to prevent pyæmia, that it appears reasonable to interfere."

ARTICLE IX.

OPHTHALMIC REPORT.

BY HENRY W. WILLIAMS.

TABLE OF OPHTHALMIC OPERATIONS.

Diseases.	Whole number of Patients.	Operations.	Total number of operations.	Successful.	Unsuccessful.	Partial success.
Cataract Hard	70	Flap extraction with suture	102	85	9	8
" "	63	" " without " .	104	87	10	7
" Soft	23	Discission	34	28	2	4
" Hard	10	Scoop extraction	12	9	3	. .
" Congenital	8	Discission	13	12	. .	1
" Traumatic	4	"	3	3	1	. .
Glaucoma	20	Iridectomy	28	15	7	6
Leucoma	6	"	8	5	. .	3
Opaque Capsule	41	Removal of Capsule	44	35	4	5
Occlusion of Pupil	22	Iridectomy	31	18	6	7
Strabismus	. .	Division of Muscle	163	163	. .	. .
Staphyloma Anter.	26	Abscission	26	26	. .	. .
Traumatic injury	7	Rem. of ant. half of Globe .	8	4	. .	4
" "	1	Iridectomy	1	1	. .	. .
Conical Cornea	5	Paracentesis	6	5	. .	1
Ciliary Neurosis	3	Enucleation of Globe . . .	3	3	. .	. .
Sympathetic Ophthalmia .	3	" " . . .	3	2	1	. .
Cystoid Cicatrix	2	Abscission	2	2	. .	. .
Carried forward . . .	324	*Carried forward*	595	503	43	

TABLE OF OPHTHALMIC OPERATIONS. — *Continued.*

Diseases.	Whole number of Patients.	Operations.	Total number of operations.	Successful.	Unsuccessful.	Partial success.
Brought forward . . .	324	*Brought forward*	595	503	43	46
Dislocation of Lens	3	Extraction	3	3	. .	. .
Hydropthalmia	1	Rem. of Globe	1	1	. .	. .
Abscess of Lid	5	Evacuation	5	5	. .	. .
" " Lac. Sac. . . .	14	"	19	19	. .	. .
" " Globe	5	"	5	5	. .	. .
Entropion	4	Excision of Skin, &c., . . .	4	4	. .	. .
Tumor of Lid	58	Excision	58	58	. .	. .
Molluscum	11	"	11	11	. .	. .
Opening Lach. Puncta . .	58	. . . . .	58	58	. .	. .
Pterygium	9	Excision	9	9	. .	. .
Hypopion	4	Evacuation	4	4	. .	. .
Foreign body in cornea . .	37	Removal	37	37	. .	. .
Fungus conjunctiva	8	Excision	8	8	. .	. .
Hernia of Iris	20	"	20	20	. .	. .
Total	551	*Totals*	833	744	43	46

Those cases of extraction are reported as successful where the patient was able to read ordinary print. Some of the failures arose from perverse behavior of the patients subsequent to the operation, and others of them were due to morbid conditions of the deeper parts of the eye, which had caused an unfavorable prognosis to be given before operating.

TABLE OF OPHTHALMIC OUT-PATIENTS FROM JUNE 1st, 1864, TO JUNE 1st, 1869.

Abscess of Orbit,	2
Abscess of Lachrymal Sac,	37
Abscess of Lid,	11
" Globe,	6
Amblyopia,	113
Amaurosis, Cerebral	21
Asthenopia,	48
Astigmatism,	6
Blepharitis	4
Bright's Disease,	1
Cataract, Hard	237
" Soft	24
" Cretaceous	3
" Congenital,	8
" Traumatic,	31
" Pyramidal,	2
" Incipient,	9
" Secondary,	1
" with Choroiditis,	5
Conjunctivitis,	1,955
" Papular,	158
" Catarrhal,	156
" Granular,	122
" with Meibomian Dis.,	71
" " Obst. Lac. Duct,	6
" " Blepharitis,	1
" " Opacity of Cornea,	11
" " Ulceration "	78
" Gonorrheal,	9
Conjunctiva, Fungus of	10
" Ecchymosis of	6
Cornea, Abrasion of	14
" Foreign Body in	47
" Fatty Degeneration,	1
" Opacity of	253
" Ulcer,	574
" Perforation of	7

Cancer of Fundus Oculi,	1
Ciliary Neurosis,	10
Choroiditis	30
Conical Cornea,	4
Diplopia,	3
Ectropion,	11
Entropion,	24
Exopthalmos,	3
Eye, (burn of)	4
" (Encephaloid of)	1
Foreign body in Fundus Oculi,	11
Fistula Lachrymalis,	4
Glaucoma,	26
Globe, Atrophy of	25
Hypopion,	13
Hypermetropia,	65
Hydropthalmia,	7
Hordeolum,	23
Iritis,	86
" Specific	16
" Sequelæ of	6
Iris (Hernia of)	24
Irido Choriditis,	16
Iridodialysis,	1
Inflammation of Caruncula,	1
Keratitis,	35
" Specific, inherited,	9
Lid (Burn of),	1
" (Œdema of),	3
Leucoma,	19
Lens, dislocation of	9
Lachrymal Sac,	0
" " obstruction of	136
" " inflam. "	7
Meibomian Disease,	489
Molluscum,	11
Mydriasis,	6
Myopia,	77
Micropthalmus,	5
Neuralgia, Circumorbital,	6
Nævus,	3

Night Blindness,	1
Opaque Capsule,	11
Optic Disc (atrophy of)	81
" " (congestion of)	20
Ophthalmia Neonatorum,	8
" Sympathetic,	1
Ophthalmitis,	7
Orbit, caries of	2
Pupil, occlusion of	29
Ptosis,	5
Paralysis of Motor Nerves,	36
Presbyopia,	30
Pterygium,	15
Retina (apoplexy of)	3
" (separation of)	17
Retinitis,	26
" pigmentosa,	1
Staphyloma, posterior,	66
" anterior,	45
Synechia,	39
Sclerotitis,	5
Strabismus divergens,	18
" convergens,	142
Scalded Lids,	1
Symblepharon,	3
Tumor of Orbit,	1
" " Inner Canthus,	1
" " Lids,	83
Trichiasis,	18
Trachoma,	55
Traumatic Injury,	183
Vitreous (opacity of),	13
" hemorrhage into,	5
Vitiligo,	6
Vesicle of cornea,	2
Xeroma,	4
Pinguicula,	3

The number of patients in the Ophthalmic department of the Hospital rapidly increased from the

beginning, and the tri-weekly attendance of out-patients has become very large, giving opportunity for the relief and prevention of a vast amount of suffering and helplessness. The facilities for clinical instruction have been excellent, and have been enjoyed by large numbers of students. The Surgeon has endeavored to demonstrate the advantages of simple and comparatively mild local treatment, with tonic regimen, in many of the inflammatory diseases of the external membranes of the eye; and the necessity for accurate diagnosis and prompt action in those affecting its internal tissues. A modification of the ordinary operation for cataract, in the insertion of a very fine suture at the centre of the wound, in cases of flap extraction, practised on a large scale at this Hospital, has given such results as to encourage the hope that the safety of such operations may thus be increased.

The new rooms for out-patients could scarcely be surpassed in convenience, affording as they do ample accommodations for their reception and examination ophthalmoscopically and otherwise; but the more important operations, as, for instance those for cataract, have been done under great disadvantages, for want of a suitable operating theatre; and even better results than those obtained might have been hoped for, had the wards devoted to the reception of most of these cases been better adapted for the purpose, instead of being in the basement of one of the pavilions, where it has not been possible to obviate the disadvantages of dampness and defective ventilation.

Some of the cases reported as partially successful can be made entirely so by a slight secondary operation; others of these, as well as some of those reported as unsuccessful, were operated on after an unfavorable prognosis had been given, and only to afford the patient a possible though slight chance of benefit. The general average of success is thus made apparently less than that actually obtained.

The expense of the out-patients' department has been insignificant in comparison with the benefits conferred; the cost of the remedies supplied to them having been but two cents per annum for each patient.

ARTICLE X.

REPORT OF THE AURAL DEPARTMENT.

BY J. ORNE GREEN.

WHOLE No. of patients from January 18th to June 1st, 1869, four and a half months, 158.

Under 1 year,	3
Between 1 and 5 years,	19
" 5 and 15 "	40
" 15 and 30 "	37
" 30 and 50 "	43
" 50 and 60 "	10
" 60 and 70 "	6

Males, 75. Females, 83.

DISEASES TREATED.

EXTERNAL EAR.

Acute eczema of auricle,	one side,	2
	both sides,	3
Chr. eczema of auricle,	both sides,	3
Impacted cerumen,	one side,	8
	both sides,	3
Furuncle of external meatus,		5
Foreign body in external meatus,		1
Otitis externa diffusa,	one side,	2
	with polypus,	5
	with granulations,	2
Otitis externa diffusa,	both sides,	1

MIDDLE EAR.

Acute myringitis,	2
Acute simple inflammation of tympanum, one side,	2
" " " " " both sides,	1
Chronic " " " " one side,	15
" " " " " both sides,	38
Chronic catarrh, Eustachian tubes,	8
Acute purulent inflammation of tympanum, one side,	7
" " " " " c polypus,	1
" " " " both sides,	2
Chronic " " " one side,	5
" " " " " " " c polypus,	4
" " " " both sides,	9
" " " " " " c polypus on one side,	3
" " " " " " c polypi, both sides,	1
Previous purulent inflammation tympanum resulting in perforation and deafness, one side,	2
" " " both sides,	3
Calcification of membrana tympani,	3
Cicatrices in " "	3
Abscess over mastoid with chr. pur. inflammation tympanum,	2
" " " with caries,	1
Neuralgia in ear,	1

INTERNAL EAR.

Tinnitus without deafness, the visible parts normal,	3
Nervous deafness,	1
Deaf-mutism,	1
No diagnosis,	7

POLYPI.

Of these six had their origin from the meatus, three from the tympanic cavity, and the origin of the others was not accurately determined owing to their extreme sensitiveness, and the patients never presenting themselves for a second examination. The treatment consisted in removal, for which Wilde's wire-snare, or the lever ring forceps, was employed, and after-

wards cauterizing the bases till they were completely destroyed.

The acid nitrate of mercury has been used more than any other caustic, and with the most satisfactory results; it seems to act longer than the other caustics, and the growth was often observed to continue contracting for some time after the slough had fallen off. From its powerful action, great caution is necessary not to touch any point except the root of the polypus, and this has been accomplished by always first illuminating the parts thoroughly by means of a laryngoscopic mirror on the forehead. A small point of pine wood was saturated with the acid and pressed against the desired spot, with considerable force if a deep action was desired, but only lightly if the part to be destroyed was small. Care was taken not to use the caustic often enough to excite inflammation, and as a rule one slough was allowed to come away and the redness to begin to subside before a second application was made. The time necessary for the removal of the slough was various. Where there was a strong tendency to reproduction, the slough was often thrown off within twenty-four hours; while in some other cases the slough would remain for days, and as the growth became smaller would remain for two or three weeks. Eight cases were treated in this way: in two the polypi were single hypertrophied papillæ about the size of a small pea, hanging by small pedicles from the posterior superior wall of the meatus near the membrana tympani; in the third there was a collec-

tion of three or four such papillaē of a smaller size attached to the same spot. In the first case the state of the membrana tympani was not noted; in the second it was entirely destroyed, the hammer alone being left in normal position; in the third, it was thickened generally but without perforation; in all three the otorrhœa was checked: in the third only was there a marked improvement in the hearing. In the fourth case, the polypus was three-fourths of an inch long, filling the meatus and projecting externally, the surface covered with papillaē giving it the appearance of a mulberry; after removal with the snare, and the destruction of the base on the posterior wall of the osseous meatus, the drum showed a large kidney-shaped perforation. The hearing gradually improved from contact to fifteen inches for the watch; the otorrhœa was checked, and now, some five months since the operation, there has been no return of tumor or discharge.

In two of the cases the polypi were removed, but the treatment was broken off before it was possible to speak of the result. The other two still remain under treatment and are doing well. One of them is of interest from the rapid development of the polypus, and a synopsis of the case is here given. A strong, healthy negro was in the Hospital for scalds of the face and head: from some unknown cause, an inflammation of the middle ear set in, and when first seen there was perforation of the membrani tympani, with abundant muco-purulent discharge; in the course of two weeks he was much improved, the pain had en-

tirely ceased, the discharge was very slight, and the perforation nearly healed. He was now discharged to report as an out-patint, but returned the next day with severe pain in the ear and increased inflammation of the membrana tympani and middle ear, probably due to exposure from lying on the ground. This severe pain lasted for two days, was followed by profuse discharge, and a few days after by a furuncle on the posterior wall of the meatus which prevented an inspection of the deeper parts. When this had subsided it was found that the deeper part of the meatus was filled by a polypus projecting through the perforation. This was removed by the wire snare and proved to be the size of a large pea; its base projecting through the perforation, was cauterized with liquor hydrargyri pernitratis, and two days after, a round mass, showing the slough of the caustic upon it was syringed out, and the perforation on the anterior segment was now seen to be about one and a half lines in diameter. The polypus had thus developed to the above size within ten days. The membrana tympani was red and swollen, but this gradually disappeared, the perforation began to contract, and in three days was not more than one half its former size.

ACUTE PURULENT INFLAMMATION OF THE TYMPANUM.

Ten cases, in most of which cold was given as the direct cause. Almost all were associated with an acute nasal catarrh, and all led to perforation of the membrana tympani; but in those which remained

under observation this healed satisfactorily, leaving the hearing but slightly impaired. It is impossible to speak of the result in a few of the cases, as the patients were not seen after the acute pain had subsided.

In two of the cases I performed paracentesis of the membrana tympani; in one on both, and in the other only on one side; in both, the membranes were pressed outward by the secretion behind, and with the probe were found to fluctuate. The incision at the inferior part of the posterior segment gave no pain whatever, a small quantity of muco-purulent secretion was evacuated, and the existing pain was in both cases relieved within a few minutes. One of the patients relieved of the pain withdrew from treatment after a few days; the other, a woman about twenty-three years of age, entered the Hospital May 19th, with typhoid fever of ten days' duration. On the 26th, when I first saw her, at Dr. Bowditch's request, she was in a low typhoidal state, very restless and delirious, and was reported to have been excessively deaf for a week previous. Examination showed the right membrana tympani to be of a dull, yellowish-white color, and slightly forced outwards; along manubrium swollen and deeply injected; light reflex wanting. The deeper parts of the meatus were also slightly injected. The left membrana tympani showed the same general appearances, only less marked. Two days after, on 28th, the right membrana tympani and meatus were less red and swollen, and about the middle of the anterior seg-

ment there was a small perforation, through which a thin, muco-purulent secretion exuded. The left membrana tympani was intensely red and much swollen in its upper half, while the lower half was bulging outwards, and of a yellowish color, the middle ear evidently filled with purulent secretion. It was ordered that the right ear be syringed three times a day with warm water; that the left meatus be filled three times a day with warm water, and that this be left in for ten minutes each time.

31st. The right ear was discharging freely; the redness and swelling were disappearing. Left membrana tympani was less red, but still swollen on posterior segment; no discharge. Same treatment continued.

June 2d. The discharge from right very profuse. The left membrana tympani more inflamed and swollen than two days before. Illuminating the deeper parts by means of a mirror on the forehead, I made an incision about two lines in length through the posterior segment of the membrana tympani, evacuating a drop of pus mixed with blood. During the incision the patient gave no sign of pain, or even of having felt anything. Up to this time her condition had been such that no accurate measurements of the hearing power could be taken; it was, however, necessary to speak in a very loud tone, within two feet of the ear, to attract her attention. Her complaints of pain in the ears had been frequent. A solution of sulphate of zinc (gr. ij. ad. ʒ) was ordered to be instilled into the right ear three times a day-

in the left ear warm water every two hours, for ten minutes, and syringing as soon as the ear began to discharge.

4th. Very little complaint of pain in ears. Right ear discharging much less. In left ear a thin muco-purulent discharge; swelling and redness much diminished. The above instillation in both ears five times a day, to be left in for five minutes.

9th. Discharge much less. Politzer's air-douche for the first time, which gave a perforation whistle in each ear, and made the head feel lighter, and improved the hearing.

The instillations were continued with the occasional use of the air-douche till the 28th, at which time the discharge had entirely ceased, and examination showed both membranes covered with dried pus and loose epidermis; after this had been removed the perforations were found to have healed perfectly. The watch was heard r. 2″; l. on contact; after Politzer's air douche r. 4″: l. ½″. The instillations were continued two days longer, when the watch was heard r. 12″: l. 1″. From this time Politzer's air-douche alone was used every second day, the hearing steadily improved in both, and in a fortnight the watch was heard r. 42″: l. 30″, and the voice normally. No mention has been made of the general condition of the patient; she began to improve from about the first of June; the convalescence was tedious, but offered nothing worthy of remark, and it was not till the end of August that she was discharged. It will be seen that there was a difference

in the two ears, the hearing of the left not being as acute as that of the right. The explanation of this and of the lengthened resistance of the membrana tympani on this side to the pressure of the matter was given by the patient after her recovery, who informed me that for years she had been quite deaf in the left ear. Without doubt the membrana tympani was thickened on that side, a condition which strongly indicates an early paracentesis to avoid the risk of irritation of the brain and its membranes.

ACUTE SIMPLE INFLAMMATION OF THE TYMPANUM.

Three cases: one of these of particular interest. A girl aged sixteen had for years been very deaf, requiring a very loud voice within a few feet; during a typhus fever in the Hospital she lost the hearing entirely for some days, but when I saw her could distinguish the sound of the voice when shouted into the ear, but was unable to understand the words. Both membranæ were swollen, deeply injected along the manubria, and immovable; the Eustachian tubes closed, the throat inflamed. The inflammation was reduced, and the air-douche by Politzer's method used for some three weeks, at the end of which time she had not only regained the degree of hearing which she had before the fever, but had improved so much that she could hear a distinct voice twenty feet distant, and she herself announced that she heard better than she ever remembered to have heard. The acute inflammation had apparantly caused resorption of old deposits, or thickening in the tympanum.

CATARRH OF THE EUSTACHIAN TUBES.

Eight cases: all in children between the ages of three and sixteen, and all chronic; the shortest of several months, the longest of several years duration. In these cases the syringing of astringents into the nose by Gruber's method, in connection with the air-douche, was found particularly useful, the treatment shortened and a result obtained which was scarcely possible in any other way. All of the cases were much relieved, in all but one the hearing very much improved, and in several completely restored.

NEURALGIA.

Only one case was observed, in a girl who was suffering from a scrofulous inflammation of the glands of the neck. Nearly the whole pain was referred to the ear, but examination revealed nothing abnormal. As the inflammation in the neck subsided, the pain in the ear ceased.

ARTICLE XI.

TWO CASES.

BY DAVID W. CHEEVER.

I. ENCEPHALOID TUMOR OF TONSIL.

II. OCCLUSION OF THE VAGINA.

[1.] ENCEPHALOID TUMOR OF TONSIL. — G. M., a well-formed, robust sailor, aged 34 years, without any hereditary predisposition to disease, and in the enjoyment of perfect health previous to his present disability, presented himself at the Hospital with the following history. Six months before, without any known cause, his left tonsil became enlarged and painful. It was treated by his physician as a case of tonsillitis, and, in due time, a portion of it was excised from within. No relief followed, but, instead, the tonsil continued to increase in size, and the region of the section became an obstinate ulceration. His articulation and deglutition were impaired to a considerable degree, and dyspnœa was quite marked, especially at night.

On his entrance to the Hospital, the affected tonsil appeared much enlarged. The mass protruded into the fauces, and at its apex presented an indolent ulcerated surface, one inch and a half in diameter,

with raised and everted edges. Externally, corresponding with the internal growth, and moving with it as if it were a part, was a nodule lying in the left sub-maxillary triangle, of the size of an English walnut. Manipulation of this mass gave pain. The condition of the man otherwise was excellent. There was neither the history, nor any appearance of syphilis.

He was able to take only liquid diet, and was ordered a gargle of diluted liquor sodæ chlorinatæ, the discharge from the ulcer being offensive.

During an interval of three weeks, it was observed that the tumor doubled in size, internally and externally. The consequent symptoms became much more grave, and called for some operative interference. The situation and large size of the tumor, as well as its projection outside the throat, contra-indicated any operation from inside the mouth, and it was therefore decided to attempt removing it from the outside by external incision.

Operation. — Etherization was slow and difficult, on account of the obstruction to respiration by the tumor in the fauces. As soon as it was accomplished, an incision was made, extending from just within the angle of the jaw, downward, over the most prominent part of the tumor, a distance of three inches and a half, and in direction parallel with the sterno-mastoid muscle; this incision was met by another, one inch and a half long, extending along the lower border of the jaw. The parts were dissected away on either side until the diseased growth was reached. On

enucleation this was found to be an enlarged and diseased lymphatic gland, of the size of an English walnut. It had no distinct connection with the tonsil within, but the disease was encephaloid in character. It lay outside all important structures, and was entirely removed without difficulty. The dissection was now extended until the tonsil was reached. In its course, the digastric, the stylo-hyoid and the stylo-glossus muscles were divided, the stylo-pharyngeus being left intact, on account of its proximity to the glosso-pharyngeal nerve. The fibres of the superior constrictor of the pharynx were picked apart with a director, and the pharynx thus opened between them. The finger of the operator was now enabled to sweep entirely around the diseased tonsil, the pillars of the soft palate being left intact; the mass was removed, and presented all the appearances of encephaloid disease, its size being that of a pullet's egg.

The hemorrhage during the operation was free but not excessive; the largest vessel divided being the facial artery, which was cut close to the carotid. Twelve ligatures were applied. A few of the smaller branches of the facial nerve were divided, and paralysis of the lower lip, on the same side, was the consequence. It was also observed that, on account of the section of the stylo-glossus muscle, the tongue, when protruded, took a direction toward the opposite side. A single suture closed the horizontal incision; the wound otherwise was left freely open, air passing through it with each expiration. Recovery from ether

was speedy, and there was no marked depression from the operation.

Not a single complication occurred to hinder the progress of recovery. Suppuration of a satisfactory character commenced on the second day. During the first week after the operation, the patient took liquid nourishment, administered by means of the stomach-pump. From the outset there was no pain, and respiration was easy. The granulating process was rapid, and at the end of eight days, no fluid passed through the wound in deglutition. After eleven days a small patch was observed at the lower part of the posterior pillar of the palate, which had the appearance of the original malignant growth; it was freely cauterized with nitric acid, and there was no subsequent reappearance. After seventeen days, solid food was swallowed without difficulty. In thirty-one days the wound had entirely closed. The pharynx was entirely clear; and except that the pillars of the palate on the side affected were somewhat separated, it appeared in perfectly normal condition. The tongue was protruded in a straight line, and no paralysis of the lip remained. From the operation until recovery, there was no constitutional disturbance requiring special notice.

As has been already stated, the gross appearance of both tonsil and gland were alike, and unmistakably encephaloid. The following is a record of the microscopic appearance: —

"The tumor was of a soft and friable nature,

slightly lobulated, and of a grayish-red color. On section it yielded an abundance of juice of a milky color, and of considerable consistency. Under the miscroscope, both the tonsil and the enlarged lymphatic gland appeared the same. They were composed of cells of moderate and uniform size and ovoid form, containing nuclei, and many, also, nucleoli. There was no fibrous tissue between them, but a great number of small dark granules, appearing to be freed nucleoli. On the addition of acetic acid, the nuclei became more distinct, and cells were visible containing three or four of them.

Rarity. — "Cancer of the tonsils is a very rare disease, whether scirrhus or encephaloid. Its existence is even doubted by some authorities, and it is not mentioned by the majority. It has been observed by Lobstein, J. C. Warren, Velpeau (five cases), Vidal de Cassis, Roux and Fano, Lebert and Demarquay. It is observed, for the most part, from the age of forty up to advanced life; and presents itself oftenest in the form of a tumor developed in these glandular bodies, and, at an advanced stage, with the appearance of an open ulcer, showing all the characteristics of cancerous disease.

"Cancer of the tonsils is primary or secondary; sometimes limited to that gland or even to one of its parts (Fano); in other cases sending out radiations more or less extended towards the neighboring parts, particularly at the side of the velum palati, or reappearing in other organs.

"The submaxillary ganglia frequently submit to

the law of secondary invasion, which influences the lymphatic glands whose vessels proceed from parts affected with cancer.

"The degeneration is in general encephaloid, rarely scirrhus.

"*Diagnosis:* cancer of the tonsils can be confounded with hypertrophy, or with syphilitic changes.

"If at the outset the cancer appears with the aspect of a benign hypertrophy, or if on the other hand, the jagged appearance of the tonsil, the ulceration of the orifices of the lacunæ, can in a simple hypertrophy make one think of a cancerous degeneration, there comes a time when the presence of stony hardness, of sanious, offensive ulcerations, of signs of cancerous cachexy, or the progress of the malady allow its nature to be appreciated.

"The syphilitic changes of the tonsil most often confounded with cancer, are the gummous tumors at different periods of development, and above all, at the time of their ulceration. And, indeed, it is an error with difficulty avoided in the absence of knowledge of the antecedents of the patient, or at least of the proof of a specific treatment.

"Another kind of syphilitic lesion can moreove. be a source of error. It is the hypertrophy and the vegetation of plaques muqueuses of the tonsils."—*Nouveau Dictionnaire de Médecine et de Chirurgie pratiques.* Tome deuxieme. (*Amygdales — Lésions organiques.*)

In our case there seemed to be no doubt as to its being cancer. The *growth* of the tumor, as distin-

guished from the ulceration and waste of syphilis, was one marked point. The tumor of the tonsil doubled in three weeks. The gross and the microscopic appearances were submitted to several observers, who were of one opinion as to its being cancer. The enlargement of the lymphatic gland and the identity of its structure, under the microscope, with that of the tonsil, were other strong enough points indicating cancer. The whole aspect of the man was singularly free from syphilitic taint.

Operative Interference. — Dr. John C. Warren, in his work on Tumors, mentions two cases of "scirrhus of the tonsil." The first was ligatured by a wire. At the end of five days, after atrocious suffering, symptoms of tetanus appeared, and the ligature was removed. The tumor sloughed away.

The second was seized with hooked forceps, drawn forward and removed with the knife, and the mass in the pharynx was removed with a curved, probe-pointed bistoury. Finally, the actual cautery was applied. The patient recovered.

"Amygdalotomy has been practised frequently in cases of cancer of the tonsil. Velpeau performed this operation upon a man sixty-three years old, who had had a cancer of the tonsil for two years. The cancerous mass covered the velum palati in front, nearly filling up the pharynx; suffocation was imminent. Having laid bare the primitive carotid, and passed under it a controlling ligature, Velpeau grasped the tumor with a double hook, drew it forcibly forward, then with a bistoury, the handle of which was fixed and the blade curved, he slit up the

left side of the velum palati, and succeeded in extirpating the tumor. At the same time he removed a lymphatic gland affected with cancer, resting upon the pharynx at the lower portion of the parotid region. The patient succumbed seventeen days after the operation, from pyæmia. The autopsy showed that all the cancerous element had been removed, and that the large vessels had received no injury. The same operation, but this time without a controlling ligature, was performed by Mason Warren. In a similar case, Demarquay, by means of an incision extending from the anterior border of the sterno-mastoid and terminating at the top of the larynx, laid bare the vessels and nerves which came in contact with the diseased tonsil, and was able to hold them aside, while an assistant managed the éraseur, and thus performed the extirpation of the cancerous mass." — *L. A. de Saint Germain.*

There can be little doubt that in this last case the *écraseur* was applied from within the mouth, although the description is obscure.

Removal by external incision is a dangerous operation, on account of the depth of the wound, and the proximity of the internal carotid artery. Numerous and important nerves cross our path, also, as the hypoglossal, the gustatory and glosso-pharyngeal. Operating from within the mouth, we have the danger of swelling and sloughing, and of hemorrhage beyond control. By attacking the tonsil from without, we have no inconvenience to fear after the primary dangers of the operation, except the risk of a pharyngeal fistula.

Our cases of œsophagotomy, however, have demonstrated that openings into the gullet close readily. The case above reported closed earlier than the wounds of the œsophagus, partly because the opening was higher up, and partly because the pillars of the palate closed the fistula by a valve-like action of their own.

The facility with which the tonsil can be enucleated with the finger is surprising. The following anatomical peculiarity, however, explains the reason pretty well: —

"Perhaps the most important point of the anatomy of the tonsils, next to their proximity to the internal carotid artery, is the fibrous semi-capsule described by Chassaignac, as follows: 'When one has enucleated a well developed tonsil, and examined with attention its external and internal surface, he does not hesitate to declare that the external, or adherent face, is covered with a fibrous semi-capsule, well circumscribed, independent of the neighboring aponeurosis, and resting on the cellular tissue.'"

The arteries of the tonsil are large compared with the size of the gland; they come from the ascending pharyngeal and the inferior and superior palatine arteries.

[2]. CASE OF OCCLUSION OF THE VAGINA.

Sept. 5th, 1864. — M. M., aged 22; single; born in Boston. Four years ago was operated on to relieve suppressed catamenia. Symptoms then were swell-

ing over the lower portion of the bowels, pain in the region of the uterus, extending down the thighs and back. Three weeks after the first operation, she was again operated on, on account of non-success of the first one, when, according to her account, the catamenia appeared and continued for three weeks. Never menstruated before or since, but says that a menstrual molimen has always been present since 14 years of age, when, at regular periods, there was pain and swelling over the hypogastrium, back-ache, and the usual phenomena of menstruation, without any discharge. Otherwise healthy. The patient expressed herself as miserable on account of this infirmity, having no wish to live as she then was, and desirous of submitting to anything for relief.

Sept. 6th.—The rectum having been thoroughly emptied by an enema of soap suds and aloes, she was etherized, and placed across a bed with the hips elevated and thighs flexed. On separating the labia, it was found that the vagina was of normal diameter, but terminated in a *cul de sac* about an inch and a half deep. Across the bottom was a transverse linear cicatrix, marking the site of former operations. The catheter passed freely into the bladder, and could be felt by the finger in the rectum. There seemed to be only a moderately thick septum, or wall, between these two organs. High up through the rectum could be felt a small, round, hard projection, which presented to the finger the normal sensation of the os uteri covered by the bowel.

It was evident that a cautious dissection might

open a passage between the bladder and rectum up to this point. Although the risk seemed considerable, yet influenced by the account of former operations on this patient, in which it was claimed that the uterus had been reached and menstruation had taken place, although the bladder had been wounded, without, however, serious consequences, it was decided to attempt the operation. By a slow dissection, at first with the knife through the cicatrix, and afterwards with the finger in the cellular tissue, guided by the catheter in the bladder, and finger of the other hand in the rectum, a depth of two inches from the bottom of the *cul de sac* was reached without wounding either bladder or rectum. No true vagina could be found, and no protrusion resembling a sac of retained menses. Yet just beyond the finger could now be plainly felt the supposed os uteri, covered by a thin membrane. A passage having been made thus far with safety, it was thought feasible to complete it. An assistant, with the hand over the abdomen above the pubes, pressed this projection of hard tissue firmly down into the pelvis, while the membrane covering it was cautiously incised with the knife. The finger dilating this opening failed to find any os, or body of the uterus, but passing behind a small, smooth, rounded protuberance, which corresponded to the cervix, entered a free cavity, and distinguished two oval, hard bodies, supposed to be ovaries, but afterwards found to be the two separated cornua of a malformed uterus.

It being but too plain that the cavity of the perito-

neum had been opened, of course all other attempts were desisted from. The patient was placed in an easy posture, the urine drawn off, and two grains of opium given. When seen, four hours after the operation, she had the collapsed appearance of severe constitutional shock. Chills, followed by fever, pain, and swelling of the bowels, came on early next day. Leeches over the hypogastrium, fomentations, opium, diluents, beef tea, &c., were given, and the catheter used frequently. She sank into a comatose state, and died on the 10th, four days after the operation.

Autopsy, 22 hours after death.—Body well developed. Breasts full. Nipples large and projecting. Areolæ rather dark, and studded with enlarged follicles, like those of pregnancy. External organs of generation perfect. A limited amount of injection and inflammation of the greater omentum; more of the peritoneum around the pelvic organs. Pus and serum at bottom of pelvis. A hole, which would admit the finger, leading from the vagina into the pelvic cavity, and between the rudiments of the uterus and the rectum. A small opening ulcerated through the left broad ligament. Bladder inflamed, and spotted internally with lymph. Rectum not inflamed. Neither bladder nor rectum wounded. Where the body of the uterus should have been, there was nothing. A nodule of fibrous uterine tissue, as big as a small hickory nut, in the situation of the os uteri.

No opening of the os could be found. On either side, but over an inch distant from the central por-

tion, and connected apparently by a rounded fibrous cord, were two segments of the fundus of the uterus, oval in shape, and rather larger than the part corresponding to the cervix. No cavity could be found in either of these segments. Opening from the central one were two small foramina, which ran out into the broad ligament, and seemed like uterine sinuses. Ovaries and Fallopian tubes normal, but the former larger than usual. Appearances in the ovary like corpora lutea. No opening of Fallopian tubes from the lateral cornua of the malformed uterus could be found. The round ligaments were normal.*

The annexed wood-cut is from a sketch of the parts made, *post mortem*, by my friend, Dr. George L. Underwood, of Boston.

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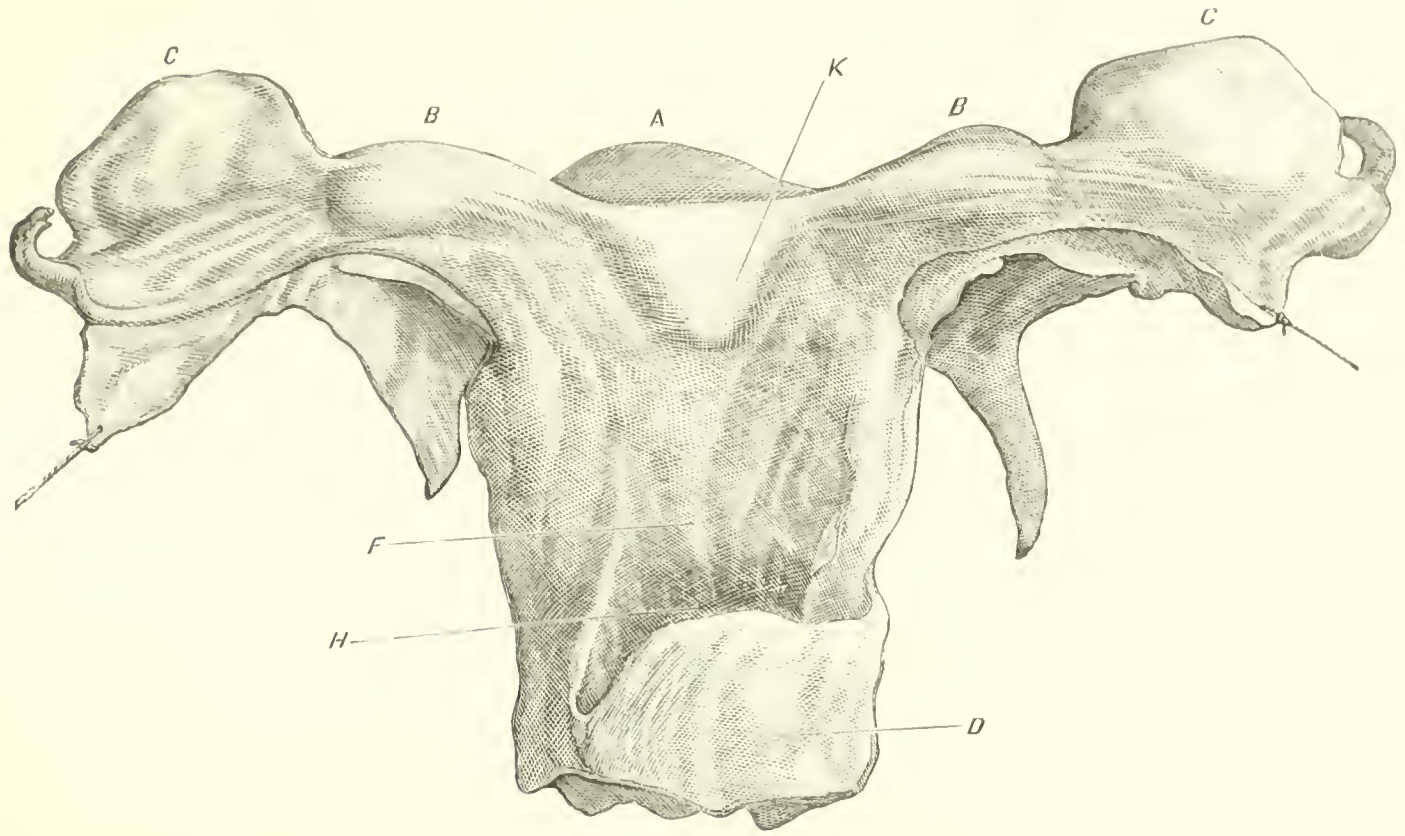
* Similar, but not identical, malformations are described by Rokitansky, vol. ii., p. 272, on "Bi-partite Uterus."

POSTERIOR VIEW OF MAL-FORMED UTERUS.



A. Bladder.
B, *B*. Segments of the body of Uterus. *C*, *C*. Ovaries.
D. Rectum. *F*. *H*. Artificial Vagina.
K. Central Fibrous Nodule representing Cervix Uteri.

ARTICLE XII.

PERI UTERINE INFLAMMATION.

BY A. D. SINCLAIR.

It is the design of this contribution to comprehend under the term *Peri-uterine Inflammation* those pelvic affections described for more than thirty years under various names, chief among which are *Intra-pelvic Phlegmonous Abscess*, *Pelvic cellulitis*, *Pelvi-Peritonitis* and *Peri-uterine Inflammation*. It is unnecessary to detail the names of the different writers on these subjects, as reference to the best books on diseases of women will furnish the desired information. Furthermore, this paper is not intended for an exhaustive treatise, but rather a faithful clinical report of a few cases presenting details of interest to the practitioner.

The adoption of the term "peri-uterine inflammation" for the condition of things presented in the cases herewith detailed, may appear too general. Why, it may be asked, were not the cases more precisely diagnosticated? Why should pelvic cellulitis, pelvi-peritonitis, ovaritis, salpingitis, &c., be comprised under a term so general? It happens not unfrequently to the practitioner to meet with cases

having a history of paroxysmal pain, more or less severe, referring to one or both sides of the hypogastrium or pelvis, with dysuria and painful defecation; or perhaps, of pus having been discharged from the rectum, vagina, or bladder, with exhaustion and symptoms of general constitutional disturbance. During this state of things he may be called to make his diagnosis. Examination may detect an abnormal fulness, with hardness and tenderness in one or more of the vaginal culs de sac, with more or less immobility of the uterus. Great constriction of the rectum may also be present from the encroachment of the tumefaction. After the most careful analysis of the physical signs which the case affords, he often, nay generally, fails to decide which organ or part was primarily involved. Hence the adoption of the term peri-uterine inflammation, as one involving no theory as to the cause or seat of the malady.

On the other hand, cases occasionally occur where the physical signs point obviously to the ovary, tube, or cellular tissue, as the affected portion, but to such, attention has been called early, for when inflammation has set up in any organ or part within the pelvis, it very soon extends to contiguous tissues, thus obscuring matters to such a degree that it becomes impossible to decide which was the starting point.

Peri-uterine inflammation occurs most frequently among puerperal women, especially after procured abortion; in women subject to menstrual irregularity with dysmenorrhœa and leucorrhœa, who have under-

gone fatigue or exposure to cold and wet during the catamenial period; in the subjects of gonorrhœa and syphilis, and those having had operations about the vagina, cervix, or cavity of the uterus. But it must not be forgotten that what appears to be the cause of the local trouble is the exciting cause only, for there exists a certain enfeebled condition of the system generally, and of the pelvic organs particularly, predisposing to the malady. It is wonderful how much severe surgical treatment some persons will endure with impunity, while in others a serious peri-uterine inflammation may set up by passing the uterine sound, or the use of the sponge tent. Since attention has been specially directed to this condition of the pelvic organs and tissues, it is remarkable how frequently cases of the kind are met with. Perhaps it would not be exaggeration to assert that nearly fifty per cent of cases of pelvic diseases come within this denomination, many of which must have been treated, at one time, as ulceration, displacement, or something else.

Case I. — *Paroxysmal pain in uterine region after a catamenial period, three weeks before entering the Hospital; formation of a distinct swelling above Poupart's ligament on the right side, with darting pain and great tenderness on pressure; a sensitive body felt through posterior vaginal cul de sac; urgent vomiting; cough; hæmatemesis; abnormal physical signs in chest; no pulmonary symptoms on entrance; discharge of pus with urine; disappearance of body in post cul de sac; increase of pulmonary abdominal signs, and of cough; night sweats. Re-admis-*

sion into Hospital after nearly three months' absence "feeling no better." Had an interval of a month, during which pulmonary and pelvic troubles seemed dormant. Amenorrhœa; dysuria; exhaustion; death ten months from commencement of illness. Autopsy: Pelvic organs adherent to each other and to sides of pelvic cavity; ovaries and Fallopian tubes distended with tubercular debris and pus, opening into bladder and uterus; no trace of fimbriated extremities of tubes; cavity of uterus filled with broken-down tissues and pus; fundus eroded to peritoneal covering; ulcerated patches in rectum; pelvic glands degenerated; pleural adhesions; tubercular infiltration of lungs, liver, &c.

A. H., æt 21. Domestic. (Entered the Hospital May 5th, 1869, under the care of Dr. Bowditch.) Married ten months, never pregnant. Health good until three weeks ago. Since then has suffered for greater part of time, from severe paroxysmal pain in uterine region, with intervals of comparative relief. During the paroxysm of pain she finds no relief in sitting, standing or lying down. Complains of severe darting pain in right iliac region where there is tenderness on pressure. Suffers most in night. Catamenia regular, sufficient without pain, last present four weeks ago. Some leucorrhœa for two months. Appetite poor. Vomits frequently after taking fluids. Tongue clean. Bowels and urine well. Pulse 78. Countenance sufficiently healthy. No pulmonary symptoms. May 6th. Shrinks from pressure over right iliac region and above pubes, where there is resistance and flatness on percussion,

but decidedly more so in iliac region than elsewhere. On vaginal examination, bladder seemed to be pushed down in front of os uteri, and body of womb seems enlarged. No special tenderness. By speculum, os appears normal and secretion of parts natural. Three leeches were applied to iliac region and followed by poultice. 7th. Pain relieved by leeching. Feels weaker. Pulse 72. Sense of resistance in lower part of abdomen, but no distinct tumor appreciable. 10th. A distinct swelling just above Poupart's ligament, on right side. 12th. No pain, and feels nicely, though exquisitely tender on pressure over swelling, reported on 10th. 15th. Intense pain in tumor which is more tender. Costive. 17th. Severe pain in right iliac region. More general swelling between right ilium and median line, the slightest pressure causing her to shrink. Amenorrhœa seven weeks. 19th. Relief to pain from application of Tincture of Iodine. Rather less fulness and tenderness. 26th. Has had much nausea and vomiting and increase of pain. Examined by Dr. Reynolds. Os uteri a little deviated toward the left side. In posterior cul de sac is a small extremely sensitive body suggesting the idea of a prolapsed ovary. On pressure over fulness in right hypogastrium where she is, to-day, not very sensitive, impulse is felt by finger in the vagina. Catamenia having not been present for eight weeks, uterine sound not introduced. No evidence of mammary change. 27th. Reports much less pain in tumefaction. On percussion, still quite sensitive towards ilium, with undoubted resistance, but re-

sonant down to Poupart's ligament. June 4th. Vomits almost everything she takes, even hydrocyanic acid. Very costive. 6th. Hæmatemesis of about half a drachm daily for past ten days. 9th. Since illness, has had a tendency to cough, which has increased for past fortnight. Sputa of partially opaque and reddish hue. There is perhaps a slight dulness on right lower back, with occasionally a little sonorous râle. 11th. Examined again by Dr. Reynolds, who found no body as observed on 26th ult. No prominence of threatened abscess in vagina, which is normal and not sensitive. 14th. Patient directs attention to her urine, which for several days deposited a thick sediment. On examination, urine is found to contain an ounce of pus in twenty-four hours' secretion. 15th. On auscultation, sonorous râles in right back, but more distinct below right clavicle, with decided broncho-vesicular respiration. No material difference in pelvic region. 18th. Very weak, more emaciation. Frequent but not severe cough. More pain across upper part of abdomen. Pus still in urine. 21st. Copious night sweats of late. Can take but little food. Pulmonary râles much less manifest than formerly. On the 23d she was discharged at her own request. On the 17th of September she was re-admitted under the care of Dr. Blake, "feeling no better" than three months before. During the interval, she was in bed greater part of the time under medical treatment. Has no cough, no vomiting. Says that pain and tenderness have returned in right iliac region after being absent nearly

a month. No external tumor. Catamenia absent for five months. Much leucorrhœa. Appetite good. Tongue clean. Two loose dejections daily. Micturition difficult, with burning pain. Profuse night sweats. Much emaciation. Spanæmia. 18th. One fourth of the quantity of urine, at least, consists of pus. Oct. 7th. Urine the same. Bowels continue very loose. 19th. Great tenderness in anterior vaginal cul de sac. Nov. 26th. Seems rather weaker. Appetite failing. Dec. 6th. (Under the care of Dr. Sinclair.) Abdomen distended and tympanitic. Sits up about half an hour daily. 25th. General condition about the same for the past three or four weeks. Appetite much diminished. Exhaustion and emaciation continue. 28th. Mouth and throat denuded in patches of their epithelium. Abdomen as on 6th. Œdema of feet and legs for past week. Jan. 9th, 1870. Although not recorded, patient gets out of bed daily for ordinary demands of nature. Has a cadaverous odor, necessitating her removal to a room by herself. After becoming more and more exhausted, she died on the 19th. Detail of treatment has been purposely omitted for sake of brevity. An endeavor was made to sustain the patient by nourishing diet, tonics and stimulants.

Sectio cadaveris, by Dr. Webber, three days after death. Rigor mortis absent. Body considerably discolored by cadaveric change, emaciated. About a quart of fluid in abdominal cavity. Intestines much distended by gas, coated with lymph and adherent to parietes on right side. Two to three

ounces of serum in left pleural cavity, and extensive pleural adhesions. Deposits of tubercle about the size of mustard seed were pretty thickly scattered throughout the left lung. Pleuræ of right side adherent throughout. Scattered deposits of tubercle in right lung as in left, except the lower part of lower lobe, and greater part of middle lobe. There was considerable congestion at the points of tubercular deposit. Pericardial sac contained about an ounce and a half of serum. Heart rather small, with coagula in both sides; weighed six ounces. Some atheromatous degeneration about aortic valves, inside and outside. Right lobe of liver entirely, and left lobes slightly, adherent to diaphragm. Just below lower edge of right lobe, opposite the gall-bladder, was a mass about an inch in diameter, of a white, cheesy substance, having the appearance of tubercular deposit, and in a few spots, calcareous, white, specks, about the size of a pin's head, scattered throughout left lobe of liver. Gall, in gall-bladder, which appeared healthy, of very light-yellow color. Weight of liver, four pounds four ounces. Spleen unusually adherent to side, and very firm in texture, was about eight inches in length, and weighed one pound seven ounces. Kidneys contained, each, two or three round tubercular deposits; cortical substance, somewhat granular. Scattered over suface of each were several dark spots, which extended through the cortical substance to the pyramids, becoming gradually lighter towards the interior. Each kidney weighed five and a half ounces. Several mesenteric

glands contained tubercular deposit. Several masses of tubercular degeneration were found in the intestines, but no ulceration. Digital examination at autopsy found pelvic organs adherent to sides of pelvic cavity, especially left; posterior cul de sac free. Pelvic cavity filled with tumors, amid which the uterus was concealed from sight. These tumors were the ovaries and Fallopian tubes, and contained pus and cheesy substance (tubercular?). The two largest (ovaries) were each about the size of a large hen's egg, and were situated in the usual ovarian position, but extended so as to nearly touch each other in the middle line, behind the uterus, to which they were slightly adherent. Crossing over these in a diagonal course outwards, downwards and inwards, ran the diseased Fallopian tubes, each about the size of the index finger, and about five inches in length. Every trace of fimbriated extremities had disappeared. For the space of two inches from the uterus, the left tube was packed with the same cheesy, purulent substance, found in the disorganized ovaries; farther along, there were other but smaller deposits of the same kind. The mucous membrane of the tubes was everywhere degenerated. On the posterior surface of the right ovarian mass, was a small transparent cyst, which contained about two drachms of clear fluid; a similar one, about the size of a pea, occupied the corresponding place on the left side. The pelvic disease, on the whole, was most marked on the right side. The contents of the pelvic cavity were removed, collectively, and it was then observed that

there existed no adhesion between the uterus and the sacral cavity, the peritoneal covering of which, with that of the lower two thirds of posterior surface of uterus, was natural. Uterus and bladder firmly adherent. A longitudinal section of the bladder revealed a somewhat ragged opening on its posterior surface, near the fundus, from which oozed purulent matter. This opening communicated freely with the diseased ovaries, and also with the cavity of the uterus. The cavity of the uterus was deeply eroded, especially at the fundus, and nearly filled with broken down tissues and pus. A thin layer only, of serous membrane, which broke down on the slightest pressure, separated the uterine cavity from that of the peritoneum. Several ulcerated patches were found in the rectum, and the pelvic glands, generally, had undergone tubercular degeneration.

CASE II.—*Syphilis; intemperance; delirium (tremens?); pains about hypogastrium, fever, headache; sanguineous discharge from vagina; death; autopsy; peritonitis; abscess of right broad ligament opening into peritoneal cavity and vagina; abscess in right ovary and Fallopian tube; left ovary healthy; uterus three and a half inches in length, healthy.*

E. E., æt. 23, was admitted for the second time to Deer Island Hospital, on Dec. 28, 1868; first in October, 1867, with syphilitic eruption, and discharged in March following. From report, she soon returned to her usual habits, drank freely of alcoholic liquors and took much laudanum, especially since the com-

mencement of her present illness, four weeks ago, since which time she had pain about the lower part of the abdomen, fever, and headache. Delirium came on twenty-four hours before entering the Hospital, and now continues to have one delusion follow another in quick succession. Countenance anxious. Eyes sunken. Skin hot and dry. Pulse 120, weak. Tongue parched, dark-brown color. Does not complain of any pain and can give no account of herself. Dec. 29th. Delirium the same. Did not sleep any. Abdomen much distended and very tympanitic; manifests no pain on pressure. A free discharge of bloody matter came from vagina in the night, and a little since, on motion. Gradually sank and died.

Sectio-cadaveris, twelve hours after death; Body not emaciated. Abdomen as when living. Thoracic organs healthy. Liver congested. Spleen and kidneys normal in appearance. Intestines distended by gas. From two to three ounces of sero-purulent and bloody matter in peritoneal cavity, with small flakes of lymph. Peritoneum much congested, covered with patches of lymph easily removed, leaving surface rough. Bladder empty. Uterus pushed to left side of pelvic cavity by an indurated mass occupying right side, involving broad ligament and adjacent cellular tissue, and firmly attached to the uterus. Right ovary enlarged, contained two to three drachms of healthy pus. Right Fallopian tube constricted near middle; free end contained half a drachm to a drachm of pus. Left ovary and Fallopian tube healthy. Uterus three and

one half inches in length, healthy. The indurated mass proved to be an abscess, which opened into the peritoneal cavity by an aperture admitting a No. 2 elastic catheter; also into the vagina through the right lateral cul de sac, by an opening admitting the index finger. The cavity of the abscess would lodge a medium-sized orange. (Notes of this case kindly furnished by Dr. Stevens, Resident Surgeon Deer Island Hospital.)

CASE III.—*Miscarriage at eighth month, five months before entrance; left her bed in two weeks; exposure to cold and wet feet followed by pelvic pain, fever and prostration; confined to bed many weeks; sharp, darting pains in pelvis and thighs; offensive leucorrhœa; vertigo; two weeks before entrance catamenia brought on by instrumental interference; fullness in left and posterior vaginal culs de sac perceptible externally, also between uterus and bladder; dysuria; tickling cough. Recovery.*

E. B., æt. 22. Married. (Admitted December 5th, 1868). No hereditary predisposition to disease. Health usually good until thirteen months ago, when she miscarried, accidentally, at the eighth month. She left her bed in two weeks. Soon afterwards, following exposure to cold and wet feet, had well-marked febrile symptoms, pelvic pains, pain in back and loins, with much prostration. She was confined to bed for many weeks, and ever since, after exertion, has had sharp, darting pains in pelvis and thighs. Frequent vertigo. No chills. Two weeks since took a severe cold, followed by soreness of the chest and cough, with scanty expectoration which still con-

time. Has had no medical treatment of late. Catamenia usually regular, lasting six or seven days; closed two weeks ago, one week later than normal. Since miscarriage has had more or less profuse, thick, yellowish and offensive vaginal discharge. Subject to nasal catarrh. Now in bed: intelligence good; face full, rather pale. Appetite poor; tongue clean; bowels generally regular; no discharge for two days. Pulse 96. Sleeps fairly. Dec. 6th. On examination of pelvic organs, uterus movable; three inches in length. Slight fullness on left of cervix, where there is pain complained of on combined internal and external pressure. Vaginal entrance somewhat tender. Occasional dysuria. Prescribed rest in bed. Take thrice daily a tablespoonful of a mixture containing Magnes. Sulphatis ʒii. Ferri Sulphatis ʒi., Acidi Sulphurici Diluti ʒii., Aquæ ad ʒxvi. 10th. Fulness in left cul de sac perceptible externally. Complains of pain in left groin. Sleeps well. One or two dej. daily. P. 67. 14th. Uterus less movable, and fullness increased, extending to posterior cul de sac. Admits that instrumental interference was employed to bring on last monthly period. 20th. Still much swelling, with tenderness on left and back of cervix. Less tenderness in left groin. Fulness very appreciable between uterus and bladder. Catamenia due. 2d. Tickling cough for the past three or four days, with feeling of tightness about chest. 27th. Catamenia present since yesterday, with increase of pain about pelvis. 29th. Fulness disappeared, except between uterus and bladder. Jan. 5th. Discharged. Well.

CASE IV. — *Miscarriage at the eleventh week after a fall; previously healthy; dysuria and painful defecation; pain about pelvis shooting down thighs; fulness with tenderness in right vaginal cul de sac; immobility of the uterus; constitutional disturbance. Recovery.*

M. W., æt. 32. Married. (Admitted Jan. 25th, 1869.) Health quite good until fifteen months ago, when she met with an accident, striking on her back and side, and miscarried in the eleventh week of pregnancy. She left her bed in six weeks, but has suffered greater part of time since from much pain about the back, pelvis and shooting down thighs, particularly troublesome in walking. Defecation and micturition often painful. Frequent dry cough. Has been under medical care and said to be suffering from some uterine displacement, with ulceration about cervix. One week ago after taking a cold, she thinks, had well-marked febrile symptoms: thirst, headache, general pains and tenderness of abdomen, with prostration. No epistaxis, no diarrhœa. Catamenia regular, scanty, with much pain, usually lasting five days; were delayed ten days at last period, and stopped after being present two days, at the beginning of recent acute symptoms. Now in bed. P. 84. Countenance not remarkable; skin natural; appetite poor; tongue red; bowels habitually constipated, open yesterday from medicine. Sleeps poorly. Tenderness in hypogastrium, but particularly in right iliac region; throbbing pains at times in pelvis. Jan. 26th. Tenderness of vaginal orifice. Cervix uteri small, and directed too far anteriorly. Some fulness be-

tween cervix uteri and bladder, somewhat tender on pressure; none appreciable elsewhere. Uterus less mobile than might be expected from swelling, suggests the evidence of adhesions not made out. Is directed a pessary of Plumbi Iodidi gr. vii. Ext. Belladonnæ gr. iij. Ol. Theobromæ q. s. daily in vagina. Vaginal injections of water at 100 temp. Ethereal Tinct. of Iodine to hypogastrium. ℞. Ferriet quiniæ citratis gr. iij. Infusi quassiæ ʒi. ʒtd. 31. Complains of severe, but not constant headache. Feb. 1st. Some fulness, with great tenderness in right vaginal cul de sac, particularly marked on rectal examination. There has been noticed, once or twice, a rounded swelling in right inguinal region, disappearing on pressure. Exhausted by vaginal injection. Is restless and nervous nights. Much commotion in abdomen. No dejection for three days. ℞. Carbonis Animalis ʒi. at night. 6th. More comfortable this forenoon than since entrance. For past two days troubled with frequency of micturition. 8th. Since last evening has had pain about pelvis and down thighs, with feeling of general exhaustion. Increased fulness and tenderness in right vaginal cul de sac extending high up. Apply flaxseed poultice to hypogastrium. 9th. Suffers much from burning pain about eyes, and headache. Less pain about pelvis and less exhaustion. Appetite still small, but relishes food. 17th. Catamenia closed yesterday after five days' duration, pretty free for first two days, scanty afterwards, with less pain. Nearly free from headache of late. Bowels better since use of charcoal.

19th. No increase of fulness about uterus, but still much tenderness on right side. Substitute small flying cantharides blisters for Iodine. 24th. Some depression of spirits since yesterday, with uneasiness about pelvis. Costive. P. 84. More pain about pelvis since last night, with a burning and throbbing sensation. March 2d. Pelvic symptoms continue unabated, with frequency of micturition since yesterday. Six leeches to be applied to hemorrhoidal veins. 6th. Less pain since leeching. No dysuria. 8th. Fulness very marked in left vaginal cul de sac and increased between uterus and bladder; much tenderness on pressure. 12th. Defecation more painful of late. Catamenia appeared this morning with more pain than at last period. Headache. 14th. Suffers for over two hours after a dejection. Pus never noticed in stools. Belladonna suppository to be put in rectum after a motion of the bowels. 18th. Catamenia ceased yesterday; pain continued throughout period. Fulness less marked than on 8th, but still much tenderness to left of cervix and much pain produced on pressure against uterus, which has been nearly or quite immovable of late. Repeat leeches as on 2d inst. 25th. Uterus more mobile. 31st. Suffered much pain for past two days. Natural dejection every other day, consequent pain relieved by suppository. (Patient passed to the care of Dr. Blake.) April 13th. Pain and tenderness about pelvis much less. Os and cervix natural. Decided improvement the past ten days. 27th. Walked out into corridor, for first time, to-day. May 31. Discharged, much relieved.

CASE V. — *Pains about pelvis for months, particularly on exertion; symptoms of acute dysentery a few days before entrance; uterus three and a half inches in length; fulness, with tenderness in right side of pelvis, afterwards extending to posterior cul de sac, where it became very prominent, causing complete immobility of the uterus; throbbing at times, in pelvis; nausea. Recovery.*

A. G., æt. 38. Married. (Admitted Feb. 4, 1869.) Mother of two children, youngest six years old. Three years ago had a sore on external genitals which was not followed by any syphilitic symptoms so far as ascertained. Last summer she fell down stairs, and since has had pain in back and pelvis, increased by walking or exertion; worse for first two weeks, attributed, she thinks, to taking cold. For a few days has been troubled with frequent, loose, stringy and bloody discharges from the bowels, with some griping and tenesmus; seven or eight dejections in the past twenty-four hours. Catamenia regular; period closed on 30th ult. Now sitting up; face pale. Appetite poor; tongue and skin natural; sleeps poorly. P. 120. Directed a diet of boiled milk and lime water. Rice. Suppository containing one grain of opium in cocoa butter, p. r. n. Rest in bed. Feb. 6th. No dej. since yesterday. Very little pain in abdomen. Slept well. P. 96. Extremities usually cold. May chew steak. 8th. Examination per vaginam et rectum: Uterus feels heavy, three and a half inches in length; does not move as freely as

natural from adhesion on right side of pelvis where there is fulness and tenderness. Apply a cantharides plaster one inch and a half square to hypogastrium, at intervals of twenty-four hours, until whole surface is counter-irritated. ℞. quiniæ Sulphatis gr. i. td. 10th. Some nausea for past two days. 19th. Has more or less tendency to loosenesss of the bowels; dejections quite small. Hypogastrium entirely counter-irritated. Substitute Syr. Ferri. quiniæ et Strychniæ Phosphatum for quinine. 21st. Let sacral region be treated with Emplast. Cantharidis in the manner directed on 8th inst. 24th. Catamenia present since yesterday, scanty, dark, with pain. 27th. Fulness and tenderness now very marked in posterior cul de sac; otherwise, as on 8th. Iodide of Lead and Belladonna pessary placed in vagina twice daily (vide case iv). March 3d. Increased uneasiness about pelvis. Three leeches to hemorrhoidal veins. 8th. Fulness behind uterus much increased, forming a marked ridge with great tenderness on pressure. Uterus immovable; catamenia closed three days ago, after three days' duration. 19th. Costive. Magnes. Sulph. with Rochelle powder. 20th. Uterus less fixed. Ridge reported on 8th less prominent. Less pain, but occasional throbbing about pelvis. One dej. Repeat counter-irritant as on the 8th ult. 26th. Complains of throbbing pain in pelvis. Repeat leeches as on 3d inst. 30th. Ridge and tenderness recorded on 8th, nearly disappeared. No throbbing in pelvis for past few days. Catamenia returned on 20th, and ceased on 27th. (Passed under the care

of Dr. Blake.) April 10th. Wakeful; otherwise doing well. Bromidi Potassii gr. xxx. at bedtime. 15th. Complains of soreness in vagina. To use a suppository containing one fourth gr. morphia at night. 16th. Nausea and vomiting for past two days. Restrict diet. May 1st. Discharged. Well.

CASE VI.—*Confined five months before entrance; muco-purulent discharge from vagina, probably gonorrhœal; pain about hypogastrium; dysuria; præcordial distress; epilepsy; peri-uterine swelling with hardness particularly marked on right side; uterus nearly fixed. Relieved.*

N. C., æt. 26, widow. (Admitted October 15th, 1869, under the care of Dr. Bowditch.) Had a sister die of phthisis; mother not strong. Has borne children; last delivery five months ago without medical care. Two months after confinement, and one month after the death of her infant, catamenia reappeared. During catamenial intervals has had a constant mucous or muco-purulent discharge from vagina. For past three days has had constant pain and soreness over pubes after exertion. Sharp pain, at times, in præcordia, with dyspnœa and sometimes semi-orthopnœa. No palpitation. Some cough for past three weeks. Now in bed; face flushed; aspect dull. Tongue dry, with thin brown coat in centre. No appetite; bowels regular. Dejections increase pain above pubes; constant desire to micturate with smarting pain; never entire retention. Some hoarse-

ness for two days. No renal symptoms; no œdema. Quite sensitive over pubes. Has lost strength. No sleep from pain. P. 84. Respn. 34. Temp. 101 vespere. ℞. Morphiæ Sulphatis gr. ¼ and repeat s. o. f. 16th. Considerable pain during night. Apply four leeches above pubes. 17th. Leech bites bleed freely, with some relief to pain. Less cough. One dej. after 5 grs. Ext. Colocynth. Comp. 18th. More severe pain. ℞. Pulv. Opii gr. ii., in pill, p. r. n. Poultice. 20th. About the same. Pulse good. Repeat leeches. 21st. Relieved by leeching. Dysuria the same. Evg. Epileptic paroxysm lasting about a quarter of an hour, for which she had inhalation of chloroform. 22d. Slept poorly, she knows not why; drowsy to-day. ℞. Bromidi Potassii gr. xx. 3td. Evg. Epileptic paroxysm, as before. Intense pain in each inguinal region; tumidity of about the size of a pigeon's egg in right, noticed for the first time. 23d. Emplast, Cantharidis $1\frac{1}{2} \times 1\frac{1}{2}$ over sacrum. 24th. No relief from blister. Severe pains to-day. Somewhat relieved by morphine. Omit Bromide Potass. 25th. Severe pain last night. Now lies with knees drawn up. ℞. Pill of calomel and opium every four hours, p. r. n. 29th. Some fetor of breath last evening. Feels better to-day. 31st. Epileptic paroxysm last evening, lasting perhaps five minutes. Two dej. yesterday from castor oil. November 1. Much more comfortable. 3d. Feels generally better; acute symptoms have subsided. To have a vaginal injection of alum and water, morning and evening. 6th. Examined by Dr. Sinclair: Peri-uterine swelling with

hardness particularly perceptible on left side per rectum; uterus nearly fixed. Swelling not appreciable on external examination. Patient states that about the 1st of August she may have been exposed to gonorrhœal virus. Emplast, Cantharidis, $1\frac{1}{2} \times 1\frac{1}{2}$ to hypogastrium, and repeat daily until the whole surface is counter-irritated. 9th. Feels more comfortable and brighter. Still some discharge. 12th. Complains of pain in usual region and in right groin; relieved by sinapism. Bowels regular. 13th. Three loose dejections. Regulate diet, and opium suppository. 15th. Feels discouraged, but acknowledges herself much better than on entrance. Emplast, Cantharidis 2×2 over lower lumbar vertebræ. 22d. Discharged at own request. Relieved.

Case VII.—*Miscarriage at the sixth month, six months before entrance; severe paroxysmal pain about pelvis, with constant slight metrorrhagia for over five months; pain in left ovarian region; posterior vaginal cul de sac filled with a solid mass, tender on pressure, encroaching on rectum; uterus normal in size, nearly immovable; dysuria; ulcerated cervical glands; night sweats. Relieved.*

W. W., æt. 29. Married. (Admitted October 26th, 1869, under the care of Dr. Blake.) Miscarried at sixth month, about six months ago; placenta, she says, came away entire. Since then has had a constant sanguineous discharge from vagina until a fortnight ago, when it gave place to a yellowish, slimy

substance. Since miscarriage has also had severe paroxysmal pain about pelvis, increased of late. Dysuria. Now considerable pain on pressure over uterus and left ovarian region. Very costive. Appetite good; constant thirst; tongue clean. Treated in out-patient department for past two weeks. 27th. On vaginal examination, uterus found retroverted; cervix inflamed; profuse leucorrhœa. ℞. Acidi chromici gr. vii. Aquæ ʒj. m. applied to cervix. ℞. Ferri et Quiniæ Citratis gr. v. Tinct. Cinchonæ Comp. ʒii. 3td. 30th. Costive. To have Fl. Ext. Belladonnæ, Tinct. Iodini, Glycerinæ āā, m. applied to cervix daily. Enema. Sherry wine ʒvi. daily. Nov. 4th. Cervix uteri less inflamed. 6th. Cervical glands on left side suppurating, one already discharged, leaving an unhealthy ulcerated surface. Evening. Suffered a good deal of pain about uterus; relieved by a suppository of Morphia and Belladonna. 17th. Catamenia present until yesterday since 9th, with excessive pain, for which suppositories of 6th were used, also subcutaneous injections of morphia p. r. n. Still much pain in lumbar region and about uterus. Copious night sweats for which she takes gr. x. oxide zinc at bedtime. Dec. 1. (Passed to the care of Dr. Sinclair.) General condition about the same of late. Has had chromic acid applied to cervix uteri at intervals of a week, and morphine and Belladonna pessary at night. Still dysuria and night sweats. Thinks iron which she has taken since October 27th now disagrees with her. Substitute Syr. Ferri quiniæ et Strych. Phosph., and Inf.

Salivæ for Oxide of Zinc. 2d. Examination per vaginam: Posterior cul de sac filled with a solid mass, tender on pressure. Per rectum: this mass is found to fill posterior part of pelvis, encroaching on the rectum; cervix directed towards pubes. Uterus of normal size, nearly immovable. 4th. At junction of fourth rib with the sternum is an enlargement, first noticed by patient a few days ago. Apply Ung. Plumbi. Iodidi. 5th. Catamenia. 15th. Condition of things about pelvis the same as on 2d inst. Still some catamenial discharge, and night sweats. Omit Syrup of the Phosphates and sage tea, and take the Super-sulphate mixture ʒss. 3td., with aromatic sulphuric acid at night. Substitute for pessaries now used those of Iodide of Lead and Belladonna. 21st. Less pain about pelvis; less perspiration. Feels very comfortable. Sponge surface every morning with a concentrated solution of common salt. Discharged. Relieved.

Case VIII.—*Procured abortion at the fifth month, eighteen months before coming under treatment; sick in consequence from two to three months; paroxysmal pain about pelvis, nearly constant for a week, particularly in left iliac region; uterus fixed by a dense somewhat elastic substance, situated chiefly on its right side; irregular catamenia; dysuria. Relieved.*

E. L., æt. 17. Single. Seamstress. (Admitted Nov. 23, 1869, under the care of Dr. Blake.) About a year and a half ago had a procured abortion at the

fifth month. The operation was done by a female, and caused considerable pain, but not great hemorrhage. She was sick afterwards for two to three months; since then at work. Is subject to paroxysmal pain about pelvis, during which she suffers intensely; pain nearly constant for past week. Catamenia very irregular, appeared yesterday morning and lasted twenty-four hours. Has now great pain in hypogastrium, but particularly in left iliac region, which is excessively tender on pressure. Tongue covered with thick white coat. No appetite. Costive. Pulse 116. Hot poppy fomentation applied to abdomen. Sol. Morph. Sulph. 5ii. statim. Evening. No relief. Morphia repeated. 24th. Less pain about pelvis. Hot foot-bath followed by heater. Sinapisms to breasts and insides of thighs. Suppository of Morphia and Belladonna, p. r. n. Tinct. Aloes et Myrrhæ. 25th. Had a comfortable night. No catamenia. Repeat treatment of yesterday. 26th. Slept well; free from pain. Fair appetite. Evening. Severe pain and tenderness in both iliac fossæ. Hypodermic injection of $\frac{1}{4}$ gr. Morph. Sulph. 27th. Slept well after injection. No pain this morning. 28th. Considerable pain in left ovarian region. Apply six leeches. 29th. Relieved by leeching. 30th. No pain. Bowels open yesterday from enema. Dec. 1st. (Passed to the care of Dr. Sinclair.) Examination per vaginam: Uterus fixed by a dense somewhat elastic substance found chiefly between uterus and bladder, also perceptible in right retro-lateral cul de sac, where are two nodular eminences, per rectum: This sub-

stance is very dense to the touch and quite perceptible on right where it extends to the pelvic bone. Emplast. Cantharidis 2×2 to each groin alternately every twenty-four hours. To take ʒss. Supersulphate mixture 3 t. d. 9th. Bowels open daily, with very little pain. More or less pain about pelvis, particularly on lying down. Micturition free, but with sharp pain. Appetite good. 14th. Discharged. Relieved.

Case IX.—*Ailing for about a month; on day before entrance well marked febrile symptoms, anorexia, vomiting; occasional slight cough; tenderness about hypogastrium; pain caused by motion of uterus; fulness and extreme tenderness in right pelvic cavity, extending towards back; painful defecation and micturition. Supervention of acute febrile symptoms; small-pox. Death.*

L. R., æt. 19. Single. Domestic. (Admitted Dec. 14th, 1869.) Had erysipelas eighteen months ago. Never confined to bed until the present time. For past two years has had a partial loss of sensation in outer aspect of right thigh from the hip to the knee; more troublesome for last six weeks. No loss of motion. Left thigh not affected. No spinal tenderness. Has been about the house, though worked but little during the past month. Catamenia occur every three or four weeks with some pain; last present from the 8th to the 12th inst.; stopped a day earlier than usual from exposure to cold and fatigue, after which she felt poorly all

day. On the morning of the 13th she felt chilly, with headache and pain in limbs; had several attacks of vomiting, and was compelled from weakness to take her bed; feverish and restless during the night. No leucorrhœa. Now in bed. Countenance rather pale. Tongue moist with white coat. No appetite; vomited twice this morning; two loose dejections to-day. Micturition free. Occasional slight cough. Abdomen not distended, but tender in iliac fossæ, especially right. Complains chiefly of headache, and pain at epigastrium, increased on deep inspiration. P. 72. R. 22. Temp. 99. ℞. Pulv. Doveri gr. x. at bedtime. 15th. Five leeches to hemorrhoidal veins. 16th. Tenderness much relieved. ℞. Potassæ Acetatis gr. xxx. 3 t. d. 19th. Complains of pain about shoulders and body. Some headache and nausea. 22d. Feels better. Diminish medicine of 16th one half. 28th. Distress at epigastrium. Substitute Quiniæ Sulphatis gr. i. 3 t. d. for medicine of 16th. Jan. 4th, 1870. Catamenia present for three days. 10th. Examined per vaginam. Movement of uterus causes pain; great tenderness, with a little fulness in posterior cul de sac. Per rectum: fulness, with extreme tenderness on right side of pelvic cavity extending towards the back. Externally, considerable pain on pressure over hypogastrium, particularly on right side, where there is a throbbing sensation at times. Pain shoots up to right hypochondrium and down thigh. Defecation painful, especially for past two or three days. Apply six leeches to anus. Rest in bed. 14th. Deep throbbing sensation in right

ovarian region last night, with pain running down thigh. Emplast. Cantharidis 2 × 2, daily over seat of pain, to be removed as soon as redness is induced. 23d. Fulness recorded on 10th perhaps a little diminished. Still some hypogastric pain on pressure, and more or less constant pain about small of back and right hip and thigh, aggravated by coughing. Defecation still painful, and some dysuria for past week. Blisters applied regularly. Repeat leeches. 26th. Thinks she might have taken cold during application of leeches, since which time she has had chilliness, headache, fever, nausea, and anorexia, with increase of pain about lower part of back. Fever mixture every two hours, p. r. n. 27th. Since last evening a papular eruption has appeared on face, and slightly on back and extremities. Vomited frequently, not before since evening of 24th, although more or less nausea. Less headache. Transferred to small-pox ward, where she, after a few days, died.

Case X. — *Always well until four weeks before entrance, when catamenia, which were always regular, returned in two weeks, profuse with pain; pain and tenderness in hypogastrium; a dense rounded mass, tender to the touch in left and posterior vaginal culs de sac, increasing in bulk and extending to the right side; uterus nearly fixed; absorption of tumefaction.*

M. B., æt 28. Single. Domestic. (Admitted Dec. 20, 1869.) Never very strong, but always enjoyed fair health till within a few weeks. For the

past month obliged to keep her bed from general weakness and pain about pelvis. Catamenia always regular till a month ago, when they anticipated their usual time by a fortnight, very profuse, lasting a week, with considerable pain. Some leucorrhœa. Appetite poor, but a little improved of late. Very costive. Urine free. Rather restless nights. Now in bed. Skin hot; tongue clean. No dejection for three days. Pulse 104. Resp. 20. Complains chiefly of pain in hypogastrium, which is quite tender on pressure. ℞. Bromidi Potassii gr. xxx. at bedtime. Fomentation of Lin. Saponis et Opii to abdomen. Simple enema. 21st. Examined per vaginam: Cervix uteri pointing towards pubes. A dense rounded mass tender on pressure in posterior and left culs de sac. Per rectum: this mass is found extending from uterus to left wall of pelvic cavity. Uterus not quite fixed. ℞. Syr. of the triple phosphates ʒ i. ʒ t. d. Iodide of Lead and Belladona pessary every night in vagina. Nutritious diet. 28th. Since entrance has complained, more or less, of pain about left side of pelvis shooting down front of thigh. Jan. 9th, 1870. Os uteri patulous; cervix pointing as before. Uterus, three inches in length, is adherent to a mass lying between it and left pelvic wall, somewhat movable. Catamenia due, and appeared during examination. 28th. Uterus only slightly movable from adhesions, now chiefly on right side with some fulness and tenderness high up, noticed for the first time. Dense mass described on 21st ult. somewhat diminished. Feb.

9th. Hardness and swelling confined to right retro-lateral cul de sac, and *per rectum* is found to extend higher up than can be measured by the finger. Cervix assuming its natural position. Catamenia just closed after being present a week with very little discomfort. March 1. Discharged, nearly well.

CASE XI. — *Irregular catamenia with pain, last present six weeks before entrance, when she got wet, arresting flow and followed by pain in pelvic region, chill and fever; pain in right iliac fossa, extending down thigh, tenderness in left. Exhaustion. A dense mass in posterior cul de sac extending to pelvic walls and including rectum. Uterus fixed.*

M. S., æt. 18. Single. Domestic. (Admitted Dec. 23, 1869.) Has had tolerable health till within six weeks, though she has never been strong. Catamenia first appeared eighteen months ago, have always been quite irregular, sometimes every two weeks, lasting a week, profuse with much pain, last present six weeks ago. During last catamenial period got wet feet arresting the flow, followed by pain in pelvic region, chills and fever. The pain has continued ever since, afternoons and evenings, with intervals of complete relief in the forenoon. When lying still has pain chiefly in right iliac fossa extending down the thigh, but there is greatest tenderness on pressure in left iliac fossa. No abnormal fulness of abdomen. Has kept her bed most of time for past week from weakness. Does not sleep

well. Habitually costive. Micturition free. Now, general condition apparently good. Appetite good; tongue clean; no dejection for four days. Pulse 84. Enema of soap suds.25th. Examined per vaginam: cervix uteri pointing towards pubes; uterus fixed to left side, posterior surface seems thickened. Right side of pelvis appears nearly natural. On pressing the finger highup, however, on the right side there is felt a round nodule, not well made out by rectal touch. Vessels about the roof of the vagina throbbing strongly. Examination caused considerable pain. Rest in bed. Nutritious diet. ℞. Tinct. Ferri. Chloridi. gtt. xx. 3 t. d. Iodide of lead and Belladonna pessary 2t. d. in vagina. 26th. Defecation somewhat painful. Jan. 3, 1870. Cervix uteri low down and pointing as before. A dense mass felt in posterior cul de sac rising from back of cervix and extending to right pelvic bone. Per rectum: this mass is found to extend to pelvic wall on left side also, but the fulness and hardness not so marked as on opposite side. Defecation and micturition without pain. Appetite good, and sleeps better. Still continues to have considerable pain in front of right thigh. 14th. Condition of things in pelvis about the same. Rectum passes through the tumefaction in posterior cul de sac by an aperture, the walls of which have an elastic feel. Tenderness on percussion over hypogastrium, with a little dulness and fulness on left side as compared with right. 23d. Appreciable fulness, but no dulness directly over pubes; otherwise as at last report. General condition

about the same as on entrance. Is anxious to return home. Discharged. Un-relieved.

CASE XII. — *Sudden suppression of catamenia from cold, a year before entrance; since then menses irregular, scanty, and painful; in bed since period of three weeks ago with pain about pelvis; dysuria; uterus anteverted, slightly pressed to right side by a hard but not sensitive mass on its left. Recovery.*

A. M., æt. 21. Single. Domestic. (Admitted Jan. 25, 1870.) Healthy until a year ago, when catamenia were suddenly stopped by exposure to cold, followed by sickness which confined her to bed for three weeks. Previous to that time her menses were always sufficient and without pain, but have since become scanty, sometimes lasting only an hour with considerable pain. Last catamenial period occurred three weeks ago, lasted three days; stopped suddenly, after exposure, for three days, and again returned for three days. Since then in bed, with pain in abdomen and lower part of back. No leucorrhœa. Habitually costive, sometimes two weeks without dejection; micturition accompanied with burning pain. Headache, with occasional vomiting. Now in bed: skin natural; tongue slightly coated; no appetite; no dejection for two days. Restless at night. P. 96. ℥ss. 3 t. d. of Super-sulphate mixture. Rest in bed. 28th. Examined per vaginam: uterus anteverted, slightly pressed to the right by a hard mass,

not tender on pressure, on its left side. Emplast. Cantharidis 2 × 2, daily, to hypogastrium. Feb. 4th. Catamenia appeared on 31st, lasted two days with pain. Bowels open daily; appetite improved. Less headache, and dysuria. 7th. Condition of things in pelvis about the same; no tenderness nor pain. Discharged. Well.

Case XIII. — *Troublesome cough without expectoration, and pain in left hypochondrium; headache and dizziness; catamenia scanty for eight months, with pain; leucorrhœa; no remarkable physical signs about chest; tenderness over abdomen; an indistinct fulness, with great tenderness on both sides of and fixing the uterus.*

M. F., æt. 31. Married. (Admitted January 29th, 1870.) Health poor for the past year and a half. During greater part of this time has had a troublesome cough without any expectoration, increased for the past three weeks, with constant pain in left hypochondrium. Soreness about front of chest on coughing; no dyspnœa; never hæmoptysis. Frequent headache, with dizziness. Occasional cold perspirations in night. Some swelling of feet a short time ago. Has lost flesh and strength within a few months. Does not feel able to sit up all day. Catamenia regular, but for the past eight months very scanty, lasting two days, with pain in small of back and tenderness of mammæ, last present one week ago. Much leucorrhœa. Now in bed: skin cool and soft;

tongue slightly coated; little appetite; bowels regular; urine sufficient, high-colored. Density 1,028, abundance of urates, no albumen. Considerable tenderness over abdomen. Cannot lie on left side from pain. P. 64. 31st. Nothing remarkable about chest. Examination per vaginam: an indistinct fulness, with great tenderness on combined external and internal pressure, in right cul de sac. Uterus not freely movable, but apparently not displaced; per rectum: as much pain complained of, on pressure, over left side as on right, and uterus seems fixed. Cannot refer commencement of pelvic trouble to any particular monthly period. Emplast. Cantharidis 3 × 3 to hypogastrium, daily. ℞. Tinct. Ferri Chloridi gtt. xx. after each meal. Pessary of Ext. Belladonna gr. ii. in vagina, every night. 4th. Complains of pain in back, increased towards night; relieved by pessary. 8th. Pelvic pain increased. Apply six leeches to hemorrhoidal veins. 9th. Relieved since leeching. Fulness reported on 31st scarcely perceptible. Uterus still somewhat fixed, and tender on motion. 12th. Catamenia appeared yesterday, scanty, with pain about pelvis extending to epigastrium. Repeat leeches. 13th. All pain, except on right side, relieved. 14th. Catamenia, after having nearly stopped, returned after leeching. 16th. At own request is discharged. Nearly well.

CASE XIV. — *Occasional retention of urine; headache; pains about pelvis; high up on right side of uterus is felt a rounded mass about the size of a pullet's egg, very tender on pressure.*

M. D., æt. 40. Widow. Seamstress. (Admitted Jan. 6th, 1870.) Healthy until two years ago, when she had swelling of the feet, numbness, and some ascites, lasting several months; none for past year. Has occasional retention of urine. Now in bed: complains of headache and pain in small of back. Some apparent tenderness in renal region. Says she has passed no water for twenty-four hours; about one pint withdrawn by catheter is normal on examination. Bowels loose for a few days, nearly twenty dejections daily; checked by medicine since yesterday. Appetite poor; tongue clean; frequent vomiting of food. Catamenia regular, scanty, with pain, now present. Some leucorrhœa. P. 84. 9th. Examination per vaginam: cervix uteri diminutive, pointing anteriorly; back of it, high up towards right side, is felt a rounded mass about the size of a pullet's egg, exceedingly tender on pressure: per rectum: this mass is found to rise from side of pelvic cavity. Tenderness on pressure over hypogastrium, especially right side, also about right lumbar region. No dejection since entrance; vomits a portion of her food. ℞. Syr. of the triple Phosphates ʒi. 3. t. d. 10th. Increased pain about pelvis. Apply six leeches to hemorrhoidal veins. 11th.

Pain still more severe. ℞. Potassæ Acetatis gr xxx. every four hours. Omit Syr. Ferri, &c. Repeat leeches. 14th. Some pain about lumbar region; dysuria; otherwise more comfortable. 17th. Mass reported on 9th much increased in size, and very tender. Examination gives much distress. Re-apply leeches. 18th. Somewhat relieved. On account of domestic matters asks that she may be discharged.

Case XV. — *Syphilis; great pain about left side of pelvis; headache; vertigo; uterus fixed by a substance of cartilaginous density extending to left wall of pelvic cavity. Relieved.*

M. R., æt. 34. Married. (Admitted November 24th, 1869, under Dr. Blake.) Was in Hospital for Syphilis in May and July. Since then at work until three days ago, when obliged to give up from pain about left hip, and severe headache. Has now excessive pain and considerable tenderness in left iliac region, and outer side of ilium. Motion of hip-joint causes pain, which does not extend down the thigh. Slept very little for past three nights. Headache increases towards night; vertigo on sitting up. Tongue covered with a white coat. No appetite; costive. P. 88. Morphiæ gr. $\frac{1}{4}$ sub. cute. Evening. Pain relieved; no sleep. ℞. Sol. Morph. Sulph. ʒii., h. s. 25th. Passed a pretty comfortable night. Suffers much from pain, to-day. Increase Morphine to $\frac{3}{8}$ gr. sub cute. at night, p. r. n. 27th. Pain at times excessive, especially in night.

No dejection for four days. ℞. Ext. Colocynth. Comp. gr. vi., Calomelanos gr. v. M. Statim. Hot poultice, with laudanum to hypogastrium. 28th. Pain the same. One dej. ℞. Pot. Iodidi gr. x. 3 t. d. 29th. Easier this morning. 30th. Suffered severely last evening; relieved by morphine injection. Less pain to-day. Dec. 2d. (Passed to the care of Dr. Sinclair.) Examined per vaginam: Uterus fixed by a mass of cartilaginous density, on left side and back. A great deal of pain caused by attempt to move the womb, per rectum: the hard mass is found to extend from the uterus to left pelvic wall. ℞. ℥ ss. Super-Sulphate mixture with gr. ss. Quiniæ Sulph. 3t. d. 4th. Complains of shooting pains in hypogastrium. Belladonna suppository. 9th. Less pain. General condition much improved. Sits up. Obstinately costive. ℞. Ext. Colocynth. Comp. gr. i., Pulv. Aloes, Ext. Hyoscyami āā gr. ii. M. Fit pil., daily, p. r. n. 18th. Discharged. Relieved.

Case XVI. — *Three miscarriages, last five years ago; after unusual exertion, had bearing down pains about pelvis, and pain about left hip and thigh increased on defecation; dysuria; exhaustion; nausea; metrorrhagia; no cough; a marked fulness, very tender on pressure in left vaginal cul de sac; some fulness in anterior cul de sac; uterus nearly immovable. Recovery.*

Mrs. ——, æt. 38. Mother of one child ten years of age. Miscarried several times, thrice within a period of twelve months; last time five years ago.

Is a fine, strong, healthy woman. Catamenia regular, sufficient, with little pain, ceased on the 5th of June, 1869. During the "Peace Jubilee" exerted herself unusually in household affairs, and walked much about the city. On the 16th, first felt uneasiness about pelvis, which increased with bearing-down pains, and pain down back of left hip and front of thigh, increased on defecation; mammary pain; dysuria; exhaustion; slight nausea. No cough. On the morning of the 20th was seized with free hemorrhage from the vagina, which continued until the 23d. Per vaginam: a marked fulness, very tender on pressure, felt in left cul de sac, extending a little anteriorly, over which, externally, can be felt a little prominence. P. 96. Five leeches were applied to the anus, nearly arresting metrorrhagia, and relieving dysuria and mastalgia. To take a mixture of Bromidum Potassii and Nitras Potassæ, 3 t. d. 25th. Fulness in anterior cul de sac, increased and extended to the right, where there is a small fibrous nodule at junction of neck and body of the womb; left cul de sac about the same, but less tender on pressure. Still slight metrorrhagia. P. 84. Sleeps well. Appetite good. No dejection since 20th, then from cathartic. Tongue slighly coated, white. No dysuria. Occasional pain about hip and thigh. 27th. No metrorrhagia since yesterday. Less pain generally. Two free dejections from Compd. Cath. pill. 29th. Fulness in left retro-lateral cul de sac very distinct, but not tenderness. Uterus very nearly immovable. Exhaustion less. Has lost flesh. July 3d. Uterus

movable. Fulness about uterus much diminished; less tenderness about pelvis internally and externally. Complains of frequency of micturition with tenesmic pain. P. natural. 9th. Dysuria less urgent. Still some fulness remaining anterior to cervix, and on its right side. Feels weak. Iodide of Lead and Belladonna pessary 2 t. d. ℞. Ammonio-Chloride of Iron 3 t. d. 16th. No dysuria. Peri-uterine fulness almost disappeared. Discharged. Well.

Case XVII. — *Six months before entrance, pain in right iliac fossa, with febrile symptoms; purulent and bloody discharge, per rectum, for four or five weeks; swelling and hardness in culs de sac, except left; uterus nearly fixed; some pain in defecation; slight cough; diminution of the swelling, &c. Relieved.*

C. W. M., æt. 40. Married. (Admitted July 10th, 1869, under the care of Dr. Bowditch.) Sterile. Always delicate, with leucorrhœa. Three years ago had inflammation of the lungs, and one year and a half ago, small-pox. Six months since, from no known cause, unless overwork and scanty diet, had great pain in right iliac fossa, with vomiting, chills, &c. For four or five weeks, has had more or less purulent and bloody discharge from the rectum. Has taken various remedies by medical advice. No catamenia for six weeks. Hectic at times. Now in bed: countenance sallow, pale, emaciated, conjunctivæ pearly. Intelligence diminished. Tongue with thin dark

coat; appetite variable; bowels well. P. 118. Complains of great debility. Cannot lie on left side. No tenderness on pressure over abdomen. Slight cough. Flatulency. Sleeps pretty well. Directed nutritious diet, and a tonic of iron and quinine, &c., 3 t. d. 12th. Since February has passed, at times, as much as four ounces of purulent matter. Habitually costive previous to illness. Right side of abdomen a little more full than natural; slightly more tender than left. On digital examination per rectum: no special tenderness of parts; body of uterus perhaps a little larger than normal; per vaginam: slight tenderness; catamenial discharge dark, resembling fecal matter, not offensive. 16th. No purulent discharge, and very little pain since entrance. Eight dejections since yesterday. Before entrance took solid food. May have steak, custard, &c. ℞. Quiniæ Sulphatis gr. i., 3 t. d. Catamenia returned copiously. 19th. Rather improved in strength and appearance. Menses moderate. 21st. Gaining daily, she thinks. Catamenia ceased yesterday. 22d. Forpast few days has had from one to two ounces purulent discharge from rectum, daily. Feels weak, but sits up for a few minutes daily. 27th. Rather more tenderness; no discharge. Ethereal Tinct. Iodine to abdomen. 30th. Discharge more slimy than purulent for past two days. Some diarrhœa since last night. August 1st. (Passed to the care of Dr. Sinclair.) Diarrhœa continues. Boiled milk and lime water. 2d. Examined per vaginam: Uterus nearly fixed; swelling and hardness surrounds about three-fourths of its

circumference left cul de sac normal. Some diarrhœa. ℞. Iron and quinine 3 t.d. 15th. Has considerable pain in right side of pelvis, on motion or pressure; some pain in defecation; no dysuria. Has passed about three ounces of pus per rectum at three different times within past week. 22d. Uterus movable, but a good deal of pain caused by motion and pressure. Swelling and hardness diminished. 28th. At own request, discharged, much relieved.

Case XVIII.—*Eight days before entrance took cold, followed by febrile symptoms and burning heat about bowels; symptoms of acute dysentery; dysuria; tenderness over abdomen; especially in region of colon; excessive "bearing-down pains"; chills and fever; nausea and vomiting; sleepless; purulent discharge from vagina; fulness and hardness on left side and back of cervix uteri; uterus fixed. Left the Hospital nearly well.*

M. E., æt. 38. Widow. (Admitted May 15th, 1869, under Dr. Bowditch.) Always well until eight days ago, then, while washing floors in thinner clothes, took cold, followed by fever, vomiting, and burning heat about bowels. Afterwards more or less constant pain, and very loose, slimy frequent dejections since yesterday forenoon, with tormina, tenesmus and frequent micturition in drops. Catamenia appeared and ceased yesterday, very slight. Now in bed; in evident pain. Appetite poor; tongue coated. Great soreness and tenderness over whole abdomen, especially in region of colon. Sleeps none. Ordered

Hop Fomentation and Opium Suppository. ℞. Dover's powder. 16th. Poultice substituted for fomentation. 17th. Feels much better, only slight tenderness especially over ascending colon. One dejection. Pulse normal; seems well. 18th. Shrinks from pressure made quickly over ascending colon; pain caused also by deep inspiration. Three slimy dejections in night, with a good deal of bearing-down pain. Milk porridge and stale bread. ℞. Ol. Ricini and Tinct. Opii Camph., and after operation of bowels; ℞. Mist. Cretæ and Elix. Opii. p. r. n. 19th. Seven dejections. 20th. Still some diarrhœa. 21st. Two dejections, with pain. Quite sensitive on deep pressure over right hip. Apply three leeches to cœcal region. 22d. Chilly at eight, A. M., and at nine o'clock severe chill, lasting an hour, then vomited, with relief. P. 124. Tongue thickly coated, white. Leech bites, bled freely with relief to pain. 24th. Slept but little. Much vomiting. Excessive bearing-down pain, described as if pelvic organs were coming down. Much less tenderness over cœcum and ascending colon. Vagina rather hot; cervix uteri enlarged and hardened. Uses opium suppository. 25th. Pain all night; very weak. Vomited some phlegm. Ceratum Cantharidis 3 × 3 over cœcal region. 26th. Quite weak and feverish; vomiting all night; very thirsty. Blister drew well; less pain. Examined by Dr. Reynolds: os and body of uterus very firm; uterus is believed to be strongly retroflexed; fundus somewhat tender on deep pressure in posterior sinus. 27th. Less bearing-down

pain since yesterday. Cœcal region more tolerant of pressure. Dysuria constant since illness; very little urine for past twenty-four hours. Catheter s. o. f. 28th. Increased bearing-down pain last evening when catheter was used. Slept only about two hours, groaning and moaning with pain in abdomen. No urine passed since catheter. Four dejections. Feels very weak, but appears decidedly better. P. 96, sufficiently strong. No tenderness over cœcum. Complains most of chills, with subsequent heat. 29th. Five loose dejections, natural color, no blood. Urine passed without catheter. No vomiting, but some nausea. Abdomen softer. Some tenderness over sigmoid flexure. P. 96. Wishes and may have arrow-root. Recipe of 18th p. r. n. 31st. Some purulent discharge from vagina since day before yesterday; more freely now. Feels better generally; less soreness. Warm vaginal injection 2 t. d. June 1st. Still some vaginal discharge. Brandy ʒ i. 3 t. d. 2d. No discharge. Slight soreness over sigmoid flexure. No chills. Slight vomiting this forenoon. Little appetite. 3d. Not quite so well; nausea and distress at stomach. Costive. 4th. Vomited twice in night. Quite sensitive over right side of abdomen, towards pelvis. Thinks she would relish steak, which may be given her to chew. 6th. Costive. Enema of soap and water. 7th. Much distress at epigastrium and left breast, with palpitation; vomits an acid substance, daily. Small quantities of purulent matter from vagina, for past two or three mornings. No chills. Scarcely any tender-

ness over pelvic region. No free dejection. On vaginal examination, much less sensitive to touch and less swelling of parts. ℞. Castor oil and Lemon Juice. 9th. Free dejection, after which she felt better. Last night seized with sickness "all over." Pain in left iliac region; some tenderness on pressure. More discharge from vagina. Some neuralgia in left side of head. P. 108. Skin comfortable, aspect not bad. Keeps in bed, and continues warm vaginal injection. 10th. Bad night, feverish, with headache. Free vaginal discharge; soreness and tenderness in left iliac region; none in right; no distinct swelling; dysuria. Bowels open. P. 112. Countenance looks well. Ethereal Tinct. of Iodine to left iliac region. 13th. Left iliac region as on 10th. Substitute Flaxseed poultice for Iodine, which cannot be borne. P. 96. 14th. Painful day yesterday. Purulent discharge from vagina in evening, with relief. Sitting up in bed, looking and feeling more comfortable. 15th. Feels sore, and worried by pelvic trouble, though better than a few days since. Some dysuria. Asks for and may have chicken and baked potato. 17th. Suffers much, she says, from uneasiness about hips and abdomen; some tenderness. 18th. Catamenia appeared and ceased yesterday. 19th. Some palpitation, nausea, and some vomiting. Catamenia returned yesterday, free. Countenance looks well. Bowels open from oil. ℞. Acidi Hydrocyanici Diluti gtt. ii., now and p. r. n. 21st. No vomiting. Copious purulent discharge from vagina yesterday; very little, occasionally, for past

week. Menstrual flow continues. Costive. ℞. Fluid Magnesia every A. M., p. r. n. 24th. Since last night, some distress in chest, and pain running up from stomach. 25th. Since yesterday, some pain over brows and sensitiveness about eyes; no change in pupils. Was seen by Dr. Williams, who directed an eye-wash. 26th. Ear-ache. 28th. Woke up with pain about shoulders and in chest. Motion causes increase of pain. No cough. Bowels free. Less pain in ear. Says that pain extended from pelvis yesterday to left breast. Points to a portion below nape of neck as the seat of head trouble. A liniment of aconite and chloroform gave some relief. 30th. Less pain in shoulders. Pain from pelvis to left breast still continues. Return of vaginal discharge. Wishes and may have ale. July 3d. Bears pressure with comparative ease, over abdomen. 8th. Cessation of discharge since yesterday. Yesterday afternoon was seized with pain in left side of head, with some soreness of throat; now better. Some sensitiveness over pubes. Dr. Reynolds finds only a certain brawny feeling of parts, per vaginam. 9th. Fainted in bath-room yesterday, from weakness. 10th. Sitting up, looking better and brighter. Severe pain in right side of head. ℞. Fl. Ext. Valerian, p. r. n. 12th. Considerable pain about head and left eye, yesterday. Bears pressure and much less sensitiveness over pubes. Appetite good. 13th. Pain still in head, also in chest, especially since yesterday. ℞. Ext. Conii. 14th. Pain the same; medicine of yesterday 4 tis horis. 16th. Much pain in eye last

night. Return of vaginal discharge, several ounces. Quite sensitive towards left iliac region. Some nausea, no vomiting. 17th. Sharp piercing pain in left iliac region. Less pain about head and eye. 19th. No discharge since 17th, and pain returned in head and both sides of abdomen. Dysuria somewhat increased. 22d. Sitting up, decidedly better. 24th. Yesterday afternoon discharge of more than a cupful of purulent matter from vagina. In bed, less pain than in former attacks. Sensitive, a little to left of median line above Poupart's ligament. No dysuria. No headache. Costive. ℞. Rochelle salts, p. r. n. 27th. Some dysuria this afternoon. Pain between shoulders at times. 28th. No pain between shoulders. No discharge. 29th. Has tried going down stairs into yard; out one and a half hours; rather more soreness since, but sitting up. Comfortable. Complains of hemorrhoids, for which cold water and an astringent ointment were directed. 30th. In bed. Found it difficult to walk this morning. August 2d. (Passed to the care of Dr. Sinclair.) Uterus somewhat movable; fulness and induration felt on left side and at back of cervix uteri; latter place particularly sensitive; elsewhere nothing remarkable. Some œdema of legs and feet for past three or four days, though in bed most of time. ℞. Quiniæ Sulphatis gr. i., 3 t. d. 5th. Some pain in side, relieved by Poppy fomentation. 11th. Some purulent discharge from vagina for three or four days. 18th. At own request is discharged. Nearly well.

CASE XIX.—*Three miscarriages; pelvic abscess four years before entrance, discharging per rectum, from time to time; lancinating pain, with tenderness and swelling in left iliac region for several weeks, preceded by febrile symptoms and followed by purulent discharge per rectum, sometimes nearly a pint daily; dysuria; swelling in right groin; uterus fixed; fulness, hardness and tenderness in culs de sac that on left side extending to recto-vaginal septum; calibre of rectum diminished. Relieved.*

A. F., æt. 26. Married. (Admitted June 26th, 1869, under the care of Dr. Bowditch.) Sickly from childhood, but no definite disease until she had pelvic abscess four years ago, which has discharged, per rectum repeatedly, since. Has had three miscarriages; last seven years ago. A few weeks ago, after overwork, had attack of vomiting and fainting, with general pains and slight chills. Soon afterwards had severe lancinating pain in left iliac region, with excessive tenderness and some tumidity; some pain though less severe in right iliac region. Pain extended down inside of both thighs. For eight weeks has had purulent discharge from rectum, sometimes to the amount of nearly a pint in twenty-four hours. Catamenia scanty, last two periods. Occasional giddiness, with sensation of dulness in head. Some loss of memory. Now in bed. Pale, spanæmic, emaciated; countenance sunken; slight cough, aggravating pain. No appetite; thirst. Bowels at times costive, at times relaxed. Urine passed with great difficulty and distress for past six weeks; almost entire retention for two days, withdrawn by

catheter is high-colored; no sediment; no albumen. Above Poupart's ligament, on each side, is a swelling quite small, and not very sensitive on right; larger and excessively tender and painful to the touch on left. Discharge from rectum still continues, though much diminished. Sleepless for three nights. P.108, weak. Heart sounds rather feeble. Directed nutritious diet, wine, and Tinct. of the Muriate of Iron. Rest in bed. Poppy fomentations, Morphine at night, s. o. f. 27th. Discharge this afternoon of about three ounces of dark-green, offensive pus. Every four to six hours suffers great pain from inability to pass urine, with much tenderness over pubes. Catheter withdraws about six ounces. To have an enema morning and evening of warm chlorinated water. 28th. Distinct swelling in left iliac region over a space nearly three inches in diameter, rounded, very tender, not reddened, evidently a tumor connected with pelvic organs. Patient states that four years ago she had "typhoid fever" very severely, sick all summer, with intense pain in left iliac region. In November, January, and March following, she had purulent discharge per rectum; from March until the last of June discharge recurred nine times, and since then as often as once in nine months. For past four years never entirely free from pain about pelvis. 30th. Very troublesome night, with intense nausea, easier this afternoon. Discharge continues. Urine passed freely. Opiate disagrees. Substitute Fl. Ext. Valer. July 1st. Slept and rested well. No nausea. Less pain. 5th. About the same for last four days.

No discharge to-day. Swelling less sensitive. Ethereal Tinct. of Iodine to left groin. 8th. Feels weak, considerable discharge this forenoon; quite tender over pubes; costive. ℞. Ol. Ricini, Succi Limonis āā. 9th. Examination per vaginam reveals slight sensitiveness in left cul de sac; per rectum: great thickening of parts, and some obstruction, with tenderness high up. 10th. Two dejections, with great suffering. Examination caused pain which still continues. ℞. Magnesiæ Citratis ʒ i. – ʒ iii., every morning, p. r. n. 13th. Vomited citrate. Substitute ℞. Aloes et Rhei āā gr. i., Strychniæ gr. $\frac{1}{30}$ daily, p. r. n. 22d. Wine omitted for several days on account of its affecting head; takes beer. Passes by estimate from eight to twelve ounces pus daily. Two or three dejections to-day. Great soreness in left iliac fossa, just above Poupart's ligament; right side distended by a rather hard mass about the size of a goose's egg, apparently rising up from pelvis. 30th. Some diarrhœa. 31st. Swelling over right Poupart's ligament disappeared. Belladonnæ gr. iv., in pessary. August 1st. (Passed to the care of Dr. Sinclair.) Uterus completely immovable. ℞. Quinine and Iron 3 t. d. 5th. Examined per vaginam: Uterus as on 1st. Fulness, with hardness and tenderness in culs de sac; swelling in left sinus extends downwards into recto-vaginal septum; per rectum: swelling with induration, found to extend to pelvic walls and constrict the intestines to the calibre of one half to three-fourths of an inch. No perceptible swelling on external examination. 7th. Vomited for the second

time in the past four weeks, about half an ounce of purulent substance mixed with blood, preceded by distress at epigastrium and between shoulders, and followed by relief. 12th. Return of pelvic pain last four days. 15th. Discharged about half an ounce of purulent matter, per rectum, yesterday, and again to-day. Pain continues with short intervals of relief; nausea. 16th. Costive for six days. Enema. 17th. Injection not returned. Increased tenderness, and perhaps extension of recto-vaginal inflammation. Pained by Aloes, &c. Substitute Pil. Cath. Comp. 18th. Two dejections with pain. 20th. Was seized about midnight with severe pain about pelvis, recurring at intervals, with increasing severity. Lost consciousness this forenoon during a paroxysm. Has had similar attacks before since illness, but never causing unconsciousness since entrance. Pain somewhat relieved by hypodermic injection of Morph. Sulph. gr. $\frac{1}{4}$. For past week a tumor quite perceptible to touch in left groin. Sleeps little. 25th. Tumor in groin diminished, but abdomen more distended than of late. Three small dejections since yesterday. Appetite poor for a few days past. 28th. One dejection daily, accompanied with some purulent matter. Pain about pelvis less. 30th. Infiltration in recto-vaginal septum less. Per rectum: condition about the same as on 5th inst. Expresses herself as feeling better than at any time since entrance. Full diet. September 2d. At own request discharged. Much relieved.

CASE XX. — *Leucorrhœa four or five years, sometimes profuse; debility; vague pains about pelvis for years; intense paroxysmal pain with dysuria, nausea and vomiting; convulsion; swelling on the left side of uterus with tenderness; discharge of fetid matter from vagina, and of blood and pus from rectum, preceded by chills. Left the Hospital unrelieved.*

E. W., æt. 34. Married. (Admitted Sept. 23, 1869, under the care of Dr. Bowditch.) Has borne four children. Miscarried at second month, from no known cause, seven years ago. Leucorrhœa for four or five years, at times profuse. Has suffered from general weakness for past three years, with headache, vertigo and palpitation; pain in side, back and loins, on standing, or after exertion; bearing-down pains and occasional swelling and pain in left thigh. Catamenia usually regular, lasting from two to four days, with considerable pain of late. Bowels generally well. Micturition free, except during a paroxysm of pain, when it dribbles away; has then also some nausea and occasional vomiting. Appetite poor; no thirst. Weakness has gradually increased for past three months, particularly so the past three weeks; been obliged to keep her bed for several days from irregular attack of pain in left groin, shooting up to mammary region and down left thigh, followed by dull, aching pain. Pains at times so severe that she feels as if she were losing her senses. She was examined by Dr. Reynolds, six months ago, in the out-patient department, who found an inflammatory

tumor on the left of uterus, with some retroversion and lateral flexion, supposed to be caused by pressure of tumor. Now in bed. Face a little flushed; tongue clean; skin cool. P. 64. Respiration normal. Slight cough for three weeks. Heart sounds normal. Bowels and urine free. Abdomen tender on pressure, especially over left ovary, cannot lie on left side. 24th. Four leeches applied over left ovary, followed by warm fomentation to abdomen. Treatment of 24th repeated on 27th, followed by slight relief to pain. 30th. Emplast. Cantharidis $1\frac{1}{2} \times 1\frac{1}{2}$ over left ovary. Hypodermic injection of Morphia, p. r. n. October 5th. Suffers much from pelvic pain. Catamenia, after being present two days, stopped this forenoon. Patient on account of domestic cares obliged to leave the Hospital, to which she returned on the 21st, having suffered severely, with some delirium, during her absence, and reports having had a very thick and offensive vaginal discharge lasting two days. Bowels rather loose. Dysuria. P. 56. Very severe pain in left groin, for which she was leeched with some relief. 28th. Atropine with morphine used subcutaneously with benefit. Repeat Canth. plaster as on 30th ult. 30th. Increase of pain for past two days, requiring two injections of one half grain morphine daily. Nov. 1st. Pain still more severe. Injection repeated thrice daily. ℞. Ext. Cannabis Indicæ, and Ext. Hyoscyami, p. r. n. Sherry wine ʒ i. 3 t. d. 2d. Some fetid vaginal discharge since yesterday, A. M. Some pain now in right iliac fossa. Warm vaginal injections, to which

is added some Tinct. of Opium, daily. 7th. Continues about the same. Pain now of a throbbing character and quite severe. Medicine of 1st fails to relieve. For past two days has had subcutaneous injection of Atropine, gr. $\frac{1}{100}$, and Morphine, gr. ss. 2 t. d. 8th. No discharge since yesterday, A. M. Repeat blister. 11th. Slight return of discharge last evening. Complains of intensity of pain, with sensation of heat in affected parts. Evening. Fainted. Complains of "choking sensation." Omit Atropine from injection. 12th. Pulse feeble. Still severe pain. 13th. Convulsion this A. M.; eyes responding to light; relieved by chloroform inhalation. Weak. ℞. Bromide of Potash, gr. xxx. morning and evening, Morphiæ, gr. $\frac{1}{4}$ to blistered surface, p. r. n. 17th. Pain quite severe, requiring subcutaneous injections 3 t. d. and inhalation of chloroform, h. s. 19th. Had several slight chills to-day for the first time since entrance. Three discharges of blood and thin yellow matter from rectum. Pain and heat as on 11th. 28th. Fainted last evening. Severe pain now. No discharge. One dejection after Ext. Colocynth. Comp. 30th. Chill this A. M., lasting about an hour. Dec. 5th. Slight chill. Free discharge from rectum, with relief of pain. 21st. Has continued about the same. Discharged. Un-relieved.

CASE XXI. — *History of pelvic abscess five years ago; occasional uneasiness about pelvis since; catamenia regular, stopped suddenly a week before illness, followed by pain about pelvis, chills, fever, and vomiting, and symptoms of acute dysentery with dysuria; tumefaction, with hardness filling up left and posterior culs de sac, extending somewhat anteriorly, distinctly felt by bimanual examination; uterus quite fixed. Gradual absorption of tumefaction.*

Mrs. ——, æt. 23. Widow. Was confined to the house for five months, four years ago, with abscess in left side of pelvis which discharged per vaginam. This abscess followed what was termed an attack of cholera by her attending physician. Has had uneasiness about pelvis, at times, since. Catamenia usually regular, with some pain, appeared on the 23d of June, 1869, and stopped abruptly. Soon afterward she began to have pain about the pelvis, with chills, fever and restlessness; nausea and vomiting of bilious matter with symptoms of acute dysentery, much tenesmus and dysuria. No pain shooting down either extremity. It was for the relief of the supposed dysentery that medical aid was sought a week later (the 30th). Examination per vaginam revealed a tumefaction with hardness, filling up the left and posterior culs de sac, extending somewhat anteriorly, distinctly felt on bimanual palpation in left hypogastrium; not very tender. Ordered a mixture of bromide of potassium and nitrate of potass, 3 t. d. Six leeches to anus. July 1st. Tenesmus and hypogastric pain less since leeching; slept better. Ethe-

real tincture of iodine to hypogastrium. 2d. Iodine caused much pain in pelvis. 3d. Iodine repeated without being followed by pain. Pain in back; some difficulty but no pain in micturition. No nausea; appetite fair; bowels quiet; slept pretty well. 5th. Very little pain on pressure over tumefaction, internally or externally. Uterus quite fixed. No dysuria nor pain in defecation. A great deal of bearing-down pain again, she thinks, caused by Iodine. ℞. Quiniæ Sulphatis gr. i. 3 t. d. Continue other treatment. 8th. Tumefaction about the same, but more tenderness in culs de sac. General condition good. Iodine applied to sacrum. 14th. Tumefaction nearly disappeared; uterus nearly mobile. Little complaint when pelvic organs handled freely. Expresses herself as feeling quite well. Discharged.

Case XXII. — *Occurrence of slight irregularity in the catamenia, with unusual behavior, caused probably by extraordinary physical activity during the period; metrorrhagia; exhaustion; swelling having a doughy feeling, in left and posterior vaginal culs de sac, tender on pressure, with bearing-down sensation.*

Mrs.——, æt. 27. Mother of one child seven years of age; never pregnant since. Always in excellent health. Catamenia regular, sufficient without pain, appeared on the 12th June, 1869, a few days later than their usual interval, and continued without cessation until the 21st, when they stopped for a few hours, preceded by some pain about sacrum for twenty-four

hours. In the night had the desire to urinate, and on assuming the erect position felt a profuse gush come from the vagina of what proved to be blood. It gave her the sensation as if a bag of water had burst, and the quantity lost was estimated at over half a pint. The metrorrhagia recurred pretty freely at intervals of twenty-four hours, lasting an hour or two. During the catamenial period, which she regarded as closed on the 21st, she walked and rode a great deal, and attended the "Peace Jubilee." It was after a ride of over twenty miles that the profuse hemorrhage came on. Just before the recurrence of hemorrhage has had a little pain about pelvis; none in the interval. June 24th. Leeched at the anus. At 3.30 A. M., of 25th., metrorrhagia returned for an hour. Slept pretty well after midnight. Exhaustion. Lay most comfortably on back. No dyspepsia. No increased heat of body. Appetite poor. No dejection for three days. 27th. Metrorrhagia as before. Bowels acted freely from cathartic pill, causing no pain or uneasiness. Slight dysuria. Vaginal examination for the second time; found a doughy feeling tumefaction confined to left and posterior culs de sac. ℞. Bromide of Potassium and Nitrate of Potass., 3 t. d. Complained of exhaustion; pains about back and chest, the latter impeding free respiration. Leeches repeated as on 24th. 28th. Metrorrhagia less. Fainted twice in getting out of bed. Flesh grown soft. Exhausted feeling less. Hypogastrium painted with Eth. Tr. of Iodine. Iodide of Lead and Belladonna pessary 2 t. d.

in vagina. 30th. Tumefaction somewhat diminished, but tender on pressure, causing tenesmus; no pain nor uneasiness otherwise complained of. Appetite better; kept recumbent position faithfully. P. 72. July 2d. About the same. ℞. Quiniæ Sulph. gr. i. 3 t. d. Tenderness the same, but tumefaction much diminished. Sat up for two or three hours. 8th. A little fulness, with tenderness in posterior cul de sac. Improved generally. Discharged. Well.

The following case of peri-uterine hæmatocele may be of sufficient interest to entitle its publication. Had not the effused blood found exit through the rectum, the real nature of the case would have remained doubtful, and probably been mistaken for one of peri-uterine inflammation, with metrorrhagia.

PERI-UTERINE HÆMATOCELE.

Derangement of catamenia; fatigue and exposure to cold and wet; chills; syncope; metrorrhagia; abdominal and pelvic pain; nausea and vomiting; pelvic tumor; immobility of the uterus; discharge of large quantities of old and clotted blood per rectum, with diminution of the tumor, which afterwards appeared to ascend into abdominal cavity where it formed a hard mass, tender on pressure, most perceptible on the right of the median line. Gradual reduction of the abdominal tumor, and complete recovery.

S. H., æt. 22. Single. Domestic. English. (Admitted Nov. 28th, 1859.) Came to this country in May, and was always well until present illness, which began about six weeks before entrance, with derange-

ments of the catamenia. The menses recurred at the regular time, but the flow was more scanty than usual, with interruptions. Three days after their close, being fatigued and exposed to cold and wet out-doors, she was seized with chilliness and vertigo, and became suddenly unconscious. On recovering, she found herself in bed, with a physician in attendance. The catamenia again returned profusely, with large coagula. Had constant nausea and frequent vomiting; severe pain in abdomen; exhaustion; anorexia. The metrorrhagia diminished after a time, but the other symptoms remained. Obstinate constipation. Near the middle of November, Dr. Osgood found a pelvic tumor situated low down between the uterus and sacrum, fixing the womb, and pressing it against the pubes. About the same time she began to have copious discharges of fluid matter from the rectum, mixed with very dark blood and coagula, which continued for several days, followed, by relief to the pelvic pain, and diminution of the tumor. Some blood appeared afterwards with stools, for about two weeks. Now in bed. Countenance pale; lips and gums anæmic; tongue slightly coated; little appetite; stomach irritable. Tendency to diarrhœa; no blood in stools. Some pain across lower part of abdomen. No dysuria. Does not sleep well, not from pain. Has taken opiates freely. Pulse 106 ℞. Fl. Ext. Hyoscyami. gtt. xv. at 8, and repeat at 9 P. M. p. r. n. 29th. Slept well. 30th. Some pain in abdomen. Evening, six loose dejections, for which brandy and Tinct. Catechu were given. Dec. 1st. Examination

per vaginam: Os and cervix small. Uterus immovable from extensive surrounding dense substance which seems equally distributed, and is perceptible above pubes externally. Per rectum: this dense mass feels hard and unyielding to the touch; extends from body of uterus to the sides of the pelvic cavity, but not in rectro-sacral space, nor is the rectum encroached upon. Has neuralgic pains shooting down both thighs. Tongue coated; bad taste in mouth; diarrhœa continues. ℞. Ol. Ricini. Tr. Opii. 4th. A prominence above pubes on right side, with a feeling of indistinct fluctuation. Uterus measures $2\frac{1}{2}$ inches. Diarrhœa less. Otherwise about the same. ℞. Syr. of the triple Phosphates ʒ i. 3 t. d. 5th. Has had a feeling of chilliness this morning. Fulness above pubes more marked. 6th. Fulness about cervix reported on 1st, diminished. Prominence in right side of hypogastrium about the same. 9th. Dense mass which surrounded cervix entirely disappeared. Immobility of uterus the same. Fulness, with tenderness on pressure, in right iliac region. This fulness can be reached nowhere through vagina or rectum. Unable to turn in bed for the past four or five days from pain in right side. One dejection yesterday. 13th. Abdominal tumor extends now from a line two inches above umbilicus to another four inches below, and from a line three inches on the left of the navel to one five inches on the right of the same, where is found the most salient and tender point of the mass. Had a good night; slept well after ʒ ii. Sol. Morph. Sulph. Pulse 96; tongue natural; no

dejection for two days. Enema of salt water. 15th. Abdomen most tender at a point one inch upwards and outwards from umbilicus. No chills. Appetite small. Restless. 18th. Temp. 102 at visit. After consultation, abdominal tumor explored; found hard and resisting, giving the sensation as if the instrument were passing through fibrous tissue. A few drops of dark blood, only, escaped through the canula. Pulse 112. Temp. $102\frac{1}{4}$. 19th. Pulse 104. Temp. $100\frac{1}{2}$. 20th. Pulse 104. Temp. 101. 21st. Tumor now seems harder than ever before, of unequal surface and somewhat diminished. General condition better. Not so much pain in abdomen. Costive. Evening. Pulse 108. Temp. $101\frac{3}{4}$. 23d. Abdomen less tender than at any time since entrance. Pulse 96. Tongue natural. Expresses herself as feeling well. Gums spongy, particularly those of lower incisors. Bowels open from enema. Pulse 96. Temp. 102. 26th. Complains of more pain in abdomen than for several days. No dejection for three days. Asks for and may have ale substituted for sherry. 28th. Abdominal tumor very marked, hard and tender immediately to the right of umbilicus, but much diminished in size of late. One dejection from enema this morning. Jan. 1, 1870. Tumor about the same. At one portion adhesion seems to have taken place between it and abdominal wall. 3d. Tumor decidedly diminished, and less tender. 14th. Sat up most of time since day before yesterday, but erect position gives a bearing-down sensation about pelvis. Sleeps well. Pulse 94. 20th. Abdominal

tumor flattened, more even on surface, about four inches in diameter, and feels like a mass of liver. Improving generally. 31st. Examination per vaginam: a fulness and hardness in left retro-lateral cul de sac, not tender on pressure. No uterine displacement well made out. No tenderness anywhere about pelvis. A flat hard mass still felt to the right of the umbilicus. Feb. 4th. Discharged. Well.

This patient was seen by Dr. Osgood on the 12th of April. "She appeared to be in robust health. No tumor could be found either by examination externally or per vaginam. Menstruation was healthy. She was at that time doing full work as nursery-maid."

ARTICLE XIII.

SURGICAL ABSTRACT.

BY DAVID W. CHEEVER.

I. ANEURISM.
II. LIGATURE OF VESSELS.
III. CASES OF CUT-THROAT.
IV. TRACHEOTOMY.
V. FOREIGN BODIES IN THE ŒSOPHAGUS.
VI. PERINEAL SECTION.
VII. LITHOTOMY.
VIII. RADICAL CURE OF HERNIA.
IX. STRANGULATED HERNIA.
X. FRACTURES.
XI. FRACTURES OF SPINE.
XII. COMPOUND FRACTURES.
XIII. AMPUTATIONS.

[The Surgical Tables were prepared by Dr. Frank W. Draper, House Surgeon in 1868.]

1. ANEURISM.

APART from a very considerable number of aneurisms of the aorta, not admitting of surgical interference, there were treated four aneurisms of large arteries. Three of these were Popliteal, and one Innominata; of the former, two recovered; the latter died.

Case I. — The *first* case had noticed a pulsating swelling in the popliteal space for ten weeks. It was increasing slowly, with darting pains. The tumor is fusiform, three inches long, and one and a half broad.

Treatment, by *flexion* of the knee. It was borne by the patient only *sixteen* hours; and, even then, not so tightly flexed but that a feeble current could be felt in the artery. At the end of sixteen hours the tumor had changed in appearance. It was shorter, wider, and firmer. The patient was unwilling to have the leg flexed again on account of the pain, and it was determined to wait and see the result.

The following day the tumor had diminished in size, and had a feeble pulsation. The next day, the second only since treatment was discontinued, the tumor was hard and without any pulsation. The tibials also had ceased to pulsate.

Between three and four weeks after the operation, a feeble recurrent pulsation was felt in the *dorsalis pedis* artery. In six weeks the circulation of the foot was quite restored. In eight weeks he was discharged.

He was seen two years afterwards, quite well, and the sac absorbed and gone.

Case II. — *Popliteal Aneurism treated by acupressure. Recovery.*

The patient is 30 years old; by occupation a bootmaker. He entered the City Hospital July 30, 1867,

having noticed seven months previously, a small tumor in the left popliteal space, which was quite painful. The pain had continued at intervals, up to the time of admission, and was aggravated by fatigue, especially after unusual exercise in walking. The tumor grew slowly, and it was noticed that the leg was at times considerably swollen.

The aneurismal tumor, at entrance, was situated in the left popliteal space. The difference in the circumference of the two legs at the knee was about two inches. The patient's condition was otherwise good; appetite, pulse, and functions generally, all normal.

On the day after entrance to Hospital, *treatment by flexion* was commenced. The leg was flexed on the thigh, and retained in position by proper straps. Complete flexion almost entirely controlled the pulsation of the aneurism, but this, at first, was not persisted in. One fourth of a grain of Sulphate of Morphia was ordered, *pro re natâ*.

The following synopsis will exhibit more succinctly the times of flexion and extension. Treatment by flexion lasted 118 hours; or five days and nights, lacking two hours: —

The first period of	flexion	at	45°	was	52	hours.
" second "	"	"	"	"	13½	"
" third "	"	"	"	"	9½	"
" fourth "	"	drawn up tight,			24	"
				Flexion,	99	"

Relaxation 2 hours.
" $2\frac{1}{2}$ "
" 11 "
" $3\frac{1}{2}$ "
19 "

99 hours of flexion out of 118 hours of treatment.

It seemed idle to pursue this method further. The patient was getting depressed by it, and no sign of consolidation appeared in the tumor. On the contrary, the latter looked as though it might become diffused before long.

Treatment by any form of pressure was therefore abandoned. And it remained to resort to the ligature, or to acupressure. The latter was decided on.

Aug. 6th, 11 A. M. Operation. The patient was fully etherized. The leg and thigh were flexed and rotated outward. An incision about two inches in length was made in the apex of Scarpa's triangle, parallel with the inner margin of the sartorius muscle. The femoral artery was readily reached, and a curved director was passed beneath it. The long saphenous nerve was drawn outward. The artery being lifted on a director, the acupressure needle piercing the sartorius, and crossing over the artery, was passed back through the rectus muscle and rested on the femur. Thus the artery was lifted away from the vein, and compressed between the pin and the sartorius and skin.

All pulsation immediately ceased in the aneurism, and below. The wound was closed externally by three wire sutures, the pin being left in place, with the head alone protruding. The pin was removed exactly seventy-two hours after its insertion. No pus or serum followed. Pin perfectly dry. No pulsation in popliteal tumor or in foot. Tumor diminishing in size.

26th. Incision almost well; a small granulating spot. Leg and foot are in every respect normal in appearance and condition, except in temperature; and the left foot is slightly more sensitive than the right. There is no tenderness in popliteal space. Aneurismal tumor small and very hard. Discharged, well, twenty days after operation.

Case III. — *Popliteal aneurism. Acupressure.*

L. I., a nervous Frenchman, 50 years of age, had had aneurism of the popliteal artery during the fourteen months previous to his entrance to the Hospital. It first appeared as a pulsating, painless nodule, in the left popliteal space. It developed steadily until nearly the whole of that space was filled by it. Its longitudinal diameter was about four inches, and its tranverse two and a half, while the difference in the circumference of the two knees was three-fourths of an inch. Its shape was regularly ovoid, and its walls were thin and easily compressible, the pulsations being very distinct. The femoral artery could

be felt with uncommon ease, lying along the bottom of Scarpa's triangle, in a thigh which in common with the rest of the body, was decidedly emaciated. The heart was apparently hypertrophied. In his occupation as a watchmaker, the patient had used a treadle-lathe, and he believed his aneurism to have been aggravated in consequence. On entrance, his condition was rather enfeebled.

Acupressure of the femoral artery was performed, as in the last case, with Simpson's needle. Less than a drachm of blood was lost. The wound was closed with silver sutures.

Recovery from ether was speedy, without nausea, and there was no considerable pain in the affected limb. At the second hour after the operation it was discovered that the aneurism was pulsating slightly. It was controlled readily by rotating the head of the needle outward, and confining it in place by adhesive straps around the thigh.

At the nineteenth hour, there was a smart chill, and pulsation had returned to a very slight degree in the aneurism, but not in the posterior tibial artery. Pulse 120. No pain. ℞. Morph. Sulph. gr. $\frac{1}{4}$ subcutaneously. The aneurismal tumor was now as hard as a nut, and contracting. There was no obvious change in the appearance or condition of the leg otherwise.

During the following day, there was a single chill, with some pain running the whole extent of the affected limb. The region about the wound was marked by an erythematous blush, and was tender.

The third night was very quietly passed, and on the following morning it was observed that the aneurism was entirely occluded, and was reduced to the size of an English walnut. Pulse 100. There was considerable pain in foot and ankle. During that day, purple lines and livid spots were observed upon the foot and extending above the ankle, and the leg below the knee was cold. The whole lower extremity was packed in cotton, and heaters were applied. The pain required two doses of morphia, one fourth of a grain each, subcutaneously. The appetite, which before had been fair, began to decline. Pulse 120 to 140.

On the following day, ninety-six hours after the operation, the needle was withdrawn; a single drop of pus followed. The erysipelatous blush about the wound had increased until the whole upper third of the thigh was involved, and the thigh in all its extent was œdematous. The whole foot was livid and distorted by muscular contraction. The internal saphena vein was distended at the instep, and could not be emptied by pressure. A charcoal poultice was applied to the thigh, and the dose of the stimulants, which had been administered since the second day, was increased and given more frequently.

The blush and œdema extended from the thigh to the abdominal walls, rigors succeeded, with intense pain in the whole limb; the lividity and coldness gradually involving the thigh, and the weakness of the patient became obviously increasing. Pulse 140.

Mind clear. ℞. Morph. Sulph. gr. $\frac{1}{3}$ subcutaneously.

During the night following, there was a steady decline, all the grave symptoms becoming intensified. Lividity extended from the thigh to the abdominal walls. Stimulation failed to produce effect, and at the one hundred and fourteenth hour after the operation, the patient died.

Case IV. — *Aneurism of the Innominata.*

Four weeks before the patient's entrance to the Hospital his attention was first called to a pulsating tumor near the upper border of the sternum, and a little to the right of the median line. Cough was troublesome, and a hoarseness, due to pressure on the recurrent laryngeal nerve, soon began to increase; on examination, the right side of the neck was observed to be markedly enlarged. The sterno-mastoid muscle was thrown outward. The general aspect of the patient tended toward lividity. Just within the right sterno-clavicular articulation could be felt a pulsating tumor, which rose above the articulation and presented a regularly ovoid outline, its apparent size being that of a goose-egg. The pulsations were strong, and the sac appeared thin and superficial. The impulse was transmitted in a marked degree to the adjacent regions. The right external carotid artery could hardly be felt, and it

was doubtful whether it was determined at all; the left pulsated normally. There was no perceptible difference in the pulsation of the two radial arteries. Auscultation discovered nothing abnormal in the cardiac sounds, or in the aorta. There was a well-marked bruit in the tumor. The patient was harassed by a cough, and there were abundant moist râles in both chests. The hoarseness was a very marked symptom, and was accompanied by a wheezy, croupy cough, like that after tracheotomy.

The general condition of the patient had not suffered materially. The appetite was good; pulse 96, regular.

During the week following his entrance, all the symptoms were aggravated, and the physical appearances became daily more grave. A consultation of the surgeons determined the tumor to be an aneurism of the innominate artery, and that the question of operative interference should be left to the decision of the patient himself.

The decision of the patient being in favor of an operation, he was etherized in the recumbent position, the process being conducted slowly and with difficulty on account of the increasing dyspnœa. The lividity, which at the outset was considerable, was much increased. When the patient was placed on the operating table he was breathing very laboriously, and the face had assumed a dark blue aspect.

The operation was with a view to the ligation of

the right common carotid artery and the right subclavian. The first incision was made for the tying of the former vessel in the apex of the superior carotid triangle. From the first cut, the venous hemorrhage was excessive, welling up in the wound in spite of vigorous sponging, each new cut causing fresh bleeding. The operation was conducted by feeling alone. The edge of the sterno-mastoid was reached and lifted, but the finger failed to detect any pulsation. The attempt to ligate here was abandoned for the time being, as it was hoped that after the subclavian was tied, pulsation might be evident in the carotid.

The incision was next made for the ligation of the subclavian in its third portion. The same difficulty was experienced with the profuse venous bleeding as before. The blood was now fully carbonized, and welled up in a continuous inky stream. No landmarks were seen, and the operation was carried on by careful picking with the director. The artery was reached and held under the finger. The subclavian aneurism needle was passed from before backwards, and below upwards, and as it emerged from under the artery, a smart gush of venous blood filled the wound, at once obscuring everything, and causing the patient to gasp, and the pulse to fall so low that it could not be felt. Stimulation caused partial reaction.

Efforts were now directed towards securing the subclavian vein, which had probably been ruptured

by the passage of the needle, through its thin and dilated walls, close to its junction with the innominata. The wound was enlarged in all directions; the sterno-mastoid was cut and reflected, and the incision carried on until the aneurismal sac was exposed, and as much room gained as possible with safety. A section of the clavicle was made with a Hey's saw, and a portion of the middle third, an inch and a half long, removed.

Meanwhile, the patient's condition was becoming increasingly alarming. The dyspnœa had developed to the gasping respiration of the moribund state; at times there was complete suspension of both pulse and respiration. The blood was of the color of prune juice. The face was dark blue. There was no consciousness. The pupils were partially dilated. The extremities were cold. Further attempts were now desisted from, as the patient was plainly *in articulo mortis*. The wound was plugged, and warmth and stimulants were applied. Death occurred two hours subsequently.

Post-mortem appearances. — The heart, arch of the aorta and adjacent vessels, with the aneurismal sac, were hastily removed through the wound in the neck. The heart was healthy, and the arch of the aorta and the left carotid and subclavian contained nothing abnormal. The aneurismal sac was as large as an orange, and was confined to the innominate artery; its cavity contained layers of firm and flaky fibrin, but the contents were chiefly blood. The openings into the aorta and the carotid and subclavian were normal.

The vertebral artery was plugged with a firm clot from its orifice as far up as the section reached (two inches). The trachea had been pushed to the left side, and was compressed laterally, so that it had assumed a triangular shape, its calibre being considerably lessened. The inner surface of the manubrium and of the adjacent inner eighth of the clavicle were eroded and roughened. The lesions of the venous trunks could not be determined, on account of the necessary haste in the removal of the specimen. Neither was the carotid dissected up high enough to determine the fact of its occlusion.

The condition of the sac, its being wholly confined to the innominate, and the plugging of some of the trunks issuing from it, render it probable that an early operation by simultaneous distal ligature of the subclavian and carotid arteries might have so far suspended the circulation in the sac as to have led to a cure.

Death was due to asphyxia, and not to hemorrhage. The quantity of blood lost was moderate, and wholly venous. It ought rather to have relieved the venous congestion of the brain. When we reflect upon the interruption to the aëration and circulation of the venous blood, we need not be surprised at the patient's condition and death. The trachea was compressed, and the recurrent nerve so stretched that one-half the larynx was paralyzed. At the same time, the vertebral artery was plugged, and the carotid diminished and probably occluded. The two great return trunks, the venæ innominatæ, passed between the aneurism

and the sternum to form the superior vena cava, and were compressed by every pulsation in the sac, thus favoring venous congestion of the brain, and also dilating the jugulars and subclavian vein so enormously as to lead to great capillary venous hemorrhage, and to rupture of the subclavian vein.

No.	Name.	Age	Occupation.	State of Disease.	Duration.	Symptoms.
1	Edward O'B. V. 274.	40	Laborer.	Popliteal artery.	10 weeks.	Tumor three inches long; one and a half wide.
2	Joseph A. XI. 211.	30	Bootmaker.	Popliteal artery.	7 months.	Severe pain. Tumor two inches in diameter.
3	Louis J. XVII. 42.	52	Watchmaker, Using treadle.	Popliteal artery.	14 months.	Tumor four inches by two inches in diameter; strongly pulsating, with thin walls. Heart hypertrophied.
4	Hugh McC. XXI. 186.	38	Laborer.	Innominate artery.	14 weeks.	Tumor very distinct at top of sternum, ovoid in shape and of size of a goose's egg. Lividity of face, dyspnœa, cough and hoarseness well marked. No cardiac complications. General condition healthy.

Treatment.	Result.	Surgeon.	Remarks.
Flexion forced first twenty-four hours; loose subsequently.	Recovery; the tumor at first hardening, and finally disappearing after 51 days. Collateral circulation fully established. (Two years later, well — sac absorbed.)	Dr. Buckingham.	The pain of flexion indicated its suspension; the patient afterwards lay with his leg flexed as tightly as possible.
Flexion, with short intervals of intermission, during first six days without any relief. Acupressure of femoral artery.	Recovery twenty days, perfect and permanent.	Dr. Cheever.	Needle removed seventy-two hours after acupressure. Aneurism nearly disappeared at date of discharge.
Acupressure of femoral artery.	Death from mortification and pyæmia.	Dr. Cheever.	The pulsation was only partially controlled the first twenty-one hours; at that time coagulation had taken place, and the tumor was hard and diminishing. Rigors, great pain in the limb, and general depression supervened, and the wound took on unhealthy action. Death occurred on the 5th day. Condition of patient debilitated from outset.
Ligature of common carotid and of subclavian unsuccessfully attempted at same operation.	Death from venous congestion of brain, asphyxia and hemorrhage, 5 hours.	Dr. Cheever.	Etherization aggravated to a great degree the lividity already very marked, from pressure by the tumor on the innominate vein. The dissection for the arteries was carried on with great difficulty on account of the steady uncontrollable hemorrhage from the overloaded venous radicles. The pressure of the tumor on the recurrent laryngeal nerve caused great dyspnœa from the beginning, and the ether increased the difficulty. The rapid collapse of the patient necessitated the suspension of the operation before the ligature of the arteries was accomplished.

2. LIGATURE OF LARGE VESSELS.

The Common Carotid Artery was tied four times. One recovered, and three died. It was tied, in every instance, for excessive hemorrhage from some of its branches. All the fatal cases became hemiplegic; and two were found, at the autopsy, to have abscess of the brain.

In the first patient, hemorrhage was subsequent to the removal of a melanotic tumor of the orbit, and was uncontrollable by ligature, ice, styptics and pressure. The left common carotid was tied. Hemiplegia and coma supervened on the second day; and he died on the sixth day.

The right common carotid was tied for excessive hemorrahge following a gun-shot wound of the face. Recovery was uninterrupted, in twenty-two days.

The common carotid was tied for hemorrhage from a deep punctured wound of the neck. The ligature came away on the eleventh day. The case progressed favorably until the sixty-third day, when epileptiform convulsions appeared; hemiplegia and coma followed, and he died on the sixty-seventh day. An abscess of the brain was found.

The common carotid was tied for secondary hemorrhage from a large incised wound of the neck.

Recurrent hemorrhage came on nine days after ligature, as soon as the collateral circulation was established. Hemiplegia, repeated small hemorrhages and symptoms of pyæmia supervened, and death took place on the forty-second day.

Abscess of the brain was found.

The Lingual Artery was tied three times, and all recovered.

In the first case, for cancer of the tongue. The vessel was tied, and a portion of the tongue removed, at the same time. The ligature came away and the wound closed safely, but the patient ultimately died of cancer, the submaxillary and sublingual glands becoming involved. In this case the artery was tied with a view to avert hemorrhage.

The Lingual Artery was tied in a boy, eight years of age, to control the hemorrhage consequent on a severe wound of the base of the tongue. The child was found insensible by the roadside, having bled profusely. When brought to the Hospital, a large clot was hanging from the mouth, from which the blood was slowly dripping.

The mouth was cleansed, and efforts made to control the hemorrhage. These proving ineffectual, and the patient being much reduced, it was thought best to secure the principal trunk, and the lingual was tied, just above the hyoid bone. The bleeding was quite checked, and did not recur. The ligature separated, the wound closed, the tongue healed, and the child was discharged well in nineteen days.

The third case was one of epithelial cancer of the tongue, and the Lingual Artery was tied with the hope of delaying its growth. The disease was so far advanced that its removal was out of the question. The ligature was accomplished with more difficulty, on account of enlarged glands; but the operation was promptly recovered from. The growth of the cancer

seemed to be considerably delayed, and the neuralgic pain to be ameliorated. The patient left the Hospital at the end of forty-six days, considerably relieved.

Whether experience shall approve the views of M. Demarquay as to performing this operation for cancer of the tongue to check the growth, time alone can decide. For hemorrhage, however, contrary to the views of most authorities, we hold that ligature of the Lingual Artery should be preferred to that of the Carotid. Its anatomical relations are so exact, that it can be arrived at by following plain rules; while the consequences of the operation are very trivial, as compared with ligature of the great artery of the neck. It is true that three of the four cases of carotid ligature given above were peculiarly unfortunate; but, in any event, the peril is great.

Authors have dissuaded from ligature of the Lingual on the ground of its being a difficult and bloody operation, opening up the deep structures of the neck, and damaging important parts. We can only say that we have not found it so. In each of the three cases given above, we reached the artery without serious delay, or mutilation. The vessel was sought in the supra-hyoid triangle, the apex of which is formed by the two tendons of the digastric muscle at its insertion into the hyoid bone, and the base by the hypoglossal nerve. Care should be taken not to wound the sub-maxillary gland, which is to be turned up; and the great cornu of the hyoid bone should be depressed by a hooked retractor.

The current in the *Femoral Artery* was interrupted in the continuity of the vessel, once by ligature, and twice by acupressure.

The Femoral was tied for hemorrhage, following a sloughing abscess, which had its origin in phlegmonous erysipelas and phlebitis.

The patient was much reduced, and the bleeding quite active. The cavity of the abscess was freely laid open in the lower third of thigh, and efforts made to secure the vessel in the sac. Neither the forceps nor the ligature could be made to hold; and it seemed plain that pressure, if temporarily successful, must be followed by recurrent bleeding, owing to extension of the sloughing process. The artery was tied in the apex of Scarpa's triangle. The vessel appeared healthy at this point. There was no return of hemorrhage. The patient, however, died of pyæmia in fifteen days. The artery was found firmly plugged above the point of ligature.

Acupressure was applied twice to the Femoral Artery in the apex of Scarpa's triangle. In the first case the needle was removed in seventy-two hours, and in the second in ninety-six hours, without hemorrhage. In both, the artery was quite occluded. The first recovered, the second died of pyæmia. The details of these cases have been already given on a preceding page, on aneurism.

The *Brachial Artery* was tied once, in the middle of the arm, for secondary hemorrhage from a bullet wound of the hand.

Recovery was complete in twenty-eight days.

The External Iliac Vein was tied twice: once for a wound penetrating the vessel, and once for hemorrhage in the femoral vein below. The former recovered, and the latter died.

In the first case, a muscular young negro was stabbed, in an affray, with a pointed shoe-knife in the left groin. Hemorrhage was profuse, and when he was brought to the Hospital, much reduced, no other measure seemed advisable except to enlarge the wound and search for the bleeding point. This was done, and the cut was found to pass down behind the peritoneum, and to have wounded the external iliac vein. This vessel was secured by ligature, and the ends brought out of the wound. There were no subsequent symptoms, and the ligature came away on the fourteenth day, without hemorrhage. He was discharged well in thirty-four days.

In the other case, the patient received a lacerated wound in the groin from his crowbar while engaged in prying, and breaking out the cargo of a vessel. Hemorrhage was restrained at first by pressure, subsequently a large thrombus formed in the groin. The patient began to sink, and an attempt was made to tie the vessel below Poupart's ligament. There being no valves in the iliac vein, the blood from above regurgitated faster than could be restrained, or managed, and the surgeon was obliged to tie the external iliac vein. The patient never rallied from the hemorrhage, and died in a few hours.

The *Femoral Vein* itself was tied once for a gunshot wound of the groin. A large amount of blood was lost before the patient reached the Hospital, a

branch of the profunda artery having been severed, as well as the vein. The vessels were secured in the wound after considerable trouble, hemorrhage from the upper end of the severed vein being controlled by pressure just above Poupart's ligament. The patient died in three hours.

A parallel series of cases of rupture of the femoral vein from the same causes was reported in the Lancet of 1868. It would seem that lacerated wounds of the great venous trunks may be more fatal than those of arteries, since the veins do not possess so much power of retraction, and since the absence of valves in certain localities may subject the patient to a rapid hemorrhage from almost the whole venous system. The mode in which wounds and injuries may push back the peritoneum and enter the pelvis behind that membrane, was illustrated by the case of a little boy who was struck in the groin by the sharp runner of a coasting sled. It penetrated beneath Poupart's ligament, and passed into the iliac fossa, behind the peritoneum; a piece of his pantaloonswas extracted from behind the great vessels. No hemorrhage occurred; and he recovered promptly.

Two points of peculiar interest are to be noted in connection with so rare an operation as the ligature of the external iliac vein.

1st. The easy separation of the ligature, which came away in two weeks.

2d. The peculiar fact that no swelling of the limb followed the sudden occlusion of the great venous trunk; being thus totally unlike what we see after embolism of the vein, or other interruption of its current.

No.	Name.	Age.	Disease or Injury.	Complications.	
				Primary.	Secondary.
1	Daniel K. 1. 77.	30	Encephaloid cancer of tongue, of nine weeks. Deglutition much impaired.	Greatly enfeebled condition.	Diarrhœa.
2	James F. 1. 119.	62	Encephaloid disease of orbit. Hemorrhage from its removal.	Continued hemorrhage.	Sec. Hemorrhage, Coma. Hemiplegia of right side.
3	Roger S. 3. 159.	8	Bite of tongue, dividing ranine artery.	Continued hemorrhage.	
4	James B. J. 5. 69.	23	Secondary hemorrhage after operation to remove bullet from hand.		Anchylosis of fingers.
5	Robert H. C. 8. 182.	35	Gunshot wound of face; excessive hemorrhage.		Pain over vertex.
6	Christoph'r E. 9. 196.	27	Phlebitis; phlegmonous erysipelas. Hemorrhage from sloughing of femoral artery.	Condition much debilitated.	Pyæmia.
7	Joseph A. 11. 211.	30	Popliteal aneurism of seven months' duration.		Erysipelas.
8	John A. 13. 263.	45	Epithelial cancer of tongue of seven weeks' duration.		Neuralgia.
9	William W. 14. 120.	22	Gunshot wound in groin.	Hemorrhage.	
10	Henry M. 14. 160.	22	Incised wound in neck, involving some deep branch of carotid artery.	Hemorrhage and great exhaustion.	Abscess; dysphonia; convulsions; hemiplegia, coma.
11	Thos. J. Hill. 16. 216.	21	Incised wound of abdomen in inguinal region involving external iliac vein.	Profuse hemorrhage.	
12	Louis J. 17. 42.	50	Popliteal aneurism of fourteen months duration.	Anæmia.	Rigors; exhaustion; erysipelas; pyæmia.
13	Hannah D. 6.	39	Secondary hemorrhage on sixth day after incised wound of neck.		Recurrent secondary hemorrhage. Paralysis. Pyæmia.

Operation.	Result.	Surgeon.	Remarks.
Ligature of *lingual* artery, preparatory to removal of tongue.	Died of exhaustion consequent on disease of tongue.	Dr. Cheever.	
Ligature of left *common carotid* artery.	Died in six days, after continued coma of four days.	Dr. Cheever.	
Ligature of *lingual* artery.	Recovery 19 days.	Dr. Cheever.	
Ligature of *brachial* artery, in middle third.	Recovery 28 days.	Dr. Thaxter.	
Ligature of *right common carotid* artery.	Recovery 22 days.	Dr. Coolidge.	
Ligature of *femoral artery.*	Death from pyæmia 15 days.	Dr. Cheever.	Artery found plugged firmly above point of ligation.
Acupressure of *femoral artery.*	Recovery 20 days.	Dr. Cheever.	Acupressure was performed after flexion had been unsuccessfully attempted. The needle was removed seventy-two hours after its insertion. Cure of the aneurism was complete.
Ligature of *lingual* artery.	Recovery, with partial relief to cancer, 46 days.	Dr. Cheever.	
Ligature of *femoral vein* in the wound.	Death, three hours, from hemorrhage.	Dr. Buckingham.	Patient had lost a large amount of blood before entrance to Hospital.
Ligature of *common carotid* artery.	Death 67 days, abscess of brain.	Dr. Homans.	Ligature came away on 11th day. Case progressed favorably until the 63d day, when an epileptiform convulsion occurred. Patient very anæmic from the first.
Ligature of *external iliac vein.*	Recovery 34 days.	Dr. Thorndike.	Ligature came away 14th day. No secondary symptoms.
Acupressure of *femoral artery.*	Death from pyæmia, 5 days.	Dr. Cheever.	
Ligature of *common carotid* artery.	Death from pyæmia and abscess of brain, with hemorrhage.	Dr. Buckingham.	The secondary hemorrhage came on the 6th day after cut throat, and recurred on the 6th day after ligature of the carotid, so soon as the collateral circulation became established. Symptoms of pyæmia and of abscess of the brain soon developed, and death occurred on the 42d day.

RECAPITULATION.

Average general mortality, 54 per cent.

	Recovered.	Died.	Total.
Ligature of Lingual artery,	2	1	3
" Common carotid artery,	1	3	4
" Femoral artery,		1	1
" Brachial artery,	1		1
" Femoral vein,		1	1
" External iliac vein,	1		1
Acupressure of Femoral artery,	1	1	2
Total,	6	7	13

III. CASES OF CUT THROAT.

Leaving out of view a large number of cases in which the injuries inflicted were trivial, we have *fourteen* severe cases of suicidal or homicidal attempts to destroy life by cutting the throat; of these, *nine* recovered, and *five* died, or a mortality of thirty-five per cent; showing that in the majority of cases attempts to take life by these wounds are not worth speaking of; and in the minority of serious cases, but one third are fatal.

In four cases the treatment of the patient before entering the Hospital is not mentioned; of the remaining ten, in two the wound was left open, and in *eight* it was "sewed up" by the physicians called to the accident. Hemorrhage carried off several of

the patients, who never rallied after reaching the Hospital; but still others owed their death to the pernicious practice of closing the lips of the skin wound, without securing either the vessels, or the edges of the wounded air-passages. In spite of remonstrance and published results, we find the same mistake committed year after year by the medical man first called, who yields to the ignorant clamor of the friends and bystanders, and closes up the wound decently and at once, thereby subjecting his patient to three distinct perils, viz: to hemorrhage, to suffocation, or to emphysema.

As to the location and amount of the injuries; in three the wound did not penetrate either the air-passages, or the pharynx. In one of these, the submaxillary gland was cut in two; in another, the external jugular vein was divided, and in the third, the internal jugular vein and pneumogastric nerve. The last case died. Of the eleven cases remaining, five were wounded between the hyoid bone and thyroid cartilage, *above* the glottis; and six, through the larynx or trachea, *below* the glottis. Those wounded above the glottis were more fatal than those below; of the former, three died, and two recovered, of the latter, one died, and five recovered. The reason is not far to seek, since all the peril in opening the air-passages consists in the danger of subsequent occlusion of the glottis, from blood, from œdema, or from emphysema; while cuts inflicted on the trachea are no more dangerous than the formal incisions of tracheotomy. The suicide,

therefore, who, ignorant of anatomy, obeys the common impulse and cuts high up, avoids the great arteries, but inflicts a perilous injury on the air-passages; while he who cuts low down endangers the carotids, but cannot imperil his life by opening the trachea.

The secondary operation of tracheotomy after these injuries was done four times; one only died, and he from hemorrhage. Would not so innocent an operation, on the adult, be a wise precautionary measure to employ in all cases of wounds *above* the glottis?

Two cases are worthy of more particular mention.

In the first, the larynx and trachea were divided by two incisions below the glottis. Silver-wire sutures were passed through the cut edges of these cartilages, and the wound closed. The patient was discharged well in three and a half weeks. The wire sutures were left in, the skin having healed over them. They occasioned no inconvenience.

One year later, this patient, who was liable to temporary accessions of insanity, was severely burned, brought to the Hospital, and died there. An examination *post mortem*, revealed the wires still *in situ*, and the larynx and trachea perfectly healed. The living membrane of the air-passage had extended over the loops of the wire, which were thus encysted, and had given rise to no symptoms whatever.

In the second case, the history was the following:

Cut Throat severing right Pneumogastric Nerve. Subsequent ligature of carotid. Secondary hemorrhage. Pyæmia and death. [Under the care of Dr. Buckingham.]

March 10, 1865. Hannah D., æt. 39, while sitting in her chair, was attacked by her husband, who came behind her with a razor, and cut her throat, from behind the right ear, obliquely downwards across the neck to the second ring of the trachea and a little beyond. When brought to the hospital, her clothes were saturated with blood, pulse weak, features ghastly, extremities cold. A deep, clean-cut wound extends from the anterior border of the right trapezius muscle to beyond the second ring of the trachea, dividing the sterno-mastoid and sterno-hyoid muscles, the external and the internal jugular vein, exposing, but not cutting, the common carotid artery at its bifurcation, and severing completely the right pneumogastric nerve; exposing also the outer belly of the digastric muscle, and cutting in two the submaxillary gland. No arterial hemorrhage; bleeding freely from internal jugular, which was tied. The wound was cleaned, and brought together by sutures. Stimulants ordered.

March 11th. — Pulse 84. Very comfortable.

12th. — Suppuration begun. Sutures taken out.

13th. — Tongue yellow, moist coat; pulse 100, and small; respiration 16 — expiration longer than inspiration, with an asthmatic wheeze; erythematous blush around wound; no union, save at upper end.

14th. — Pulse 92; respiration 19, nothing peculiar; sloughing of whole interior of wound; constant oozing from divided submaxillary gland.

15th. — Pulse 84; respiration 16.

16th, 8 A. M. — Hemorrhage came on, florid and free. Wound opened. Point of bleeding not visible. Checked by ice. At 10 A. M. it was decided, on consultation, in view of the fact that the carotid lay exposed in the bottom of a sloughy wound, dribbled over by saliva, and was liable to give way at an unexpected moment, that the most prudent course was to tie it below the omo-hyoid, and to do this by a separate incision, in order that the wound might be kept free from the sloughy discharge. The artery was secured a little above the clavicle by Dr. Buckingham, the infiltration of all the tissues, and the severing of the sterno-mastoid, complicating the operation. Both wounds soon ran together.

17th. — Pulse 108; respiration 24; mouth and tongue a little drawn to right side; sonorous râles in both lungs. Urine and fæces normal.

18th. — Respiration 24; pulse 124; large, offensive discharge from wound; mouth more drawn. Ordered tinct. ferri muriatis.

19th. — Respiration 24; pulse 124; considerable dulness over upper part of right back, with sonorous râles; no bronchial respiration; wound looks and smells badly; slight paralysis of tongue. Continue supporting treatment.

20th. — Respiration 24; pulse 120; upper two-thirds of right back dull on percussion; bronchial

respiration and bronchophony marked. Thinks herself well.

22d. — Pulse 86; more air entering lung.

24th. — Wound looks better. Upper part granulating; lower part sloughy.

25th. — Ligature on jugular came away.

29th. — Ligature on carotid came away on the thirteenth day. Wound doing well.

30th. — (Fourteenth day after ligature) faint recurrent pulsation in right temporal artery. Saliva continues to flow from wound; paralysis less.

April 10th. — Wound, and general condition of patient good until this morning, when she had a severe chill. Considerable arterial hemorrhage from wound. It is now three weeks since the ligature of the carotid, and one month since the injury.

11. — Nausea and vomiting yesterday; about midnight another chill, followed, as before, by vomiting and hemorrhage. Nearly eight ounces lost before house-surgeon could reach her. There seemed to be several points of bleeding; easily controlled by pressure. Quiet this morning; pulse 100, feeble; granulations pale, with dirty-looking pus; tongue dry.

12th. — Vomiting, but no more chills or hemorrhage. P. M. — Pain in right eye; strabismus; mind wandering; paralysis increasing. Complains of rheumatic pains in knees. Pulse 80, intermittent.

13th. — At 9 A. M., another attack of bleeding; no chill; bleeding checked by ice and pressure; paralysis of left arm; nothing remarkable in lungs.

14th. — At 4.30 A. M., bleeding, without chill or vomiting; checked with difficulty by ice and per-chloride of iron. Blood welled up freely from several points in the midst of a mass of flabby granulations, where forceps or ligature would not hold. Pulse nearly gone at wrist.

15th. — Three slight hemorrhages in last twenty-four hours; could only be checked by styptics and cold — other measures tried in vain.

16th. — Repetition of chills and oozing.

18th. — Died at 8 A.M., after further chills and hemorrhages — six weeks after injury.

19th. — *Autopsy.* — Œdema of both lungs, more marked on left; both lungs somewhat adherent to chest; no other changes in lungs. Liver enlarged and fatty. Kidneys pale and fatty. Heart loaded with fat; muscular substance friable. Pretty firm clots in proximal ends of both external and internal carotid. An abscess, as large as a walnut, on the upper part of the right hemisphere of the brain.

This case presents many points of interest. The first is, as to how far the open and foul state of the original wound may have been kept up by the flow of saliva through it, from the divided submaxillary gland; and whether it would not be good practice, should a parallel case occur, to remove the gland wholly, before closing up the wound.

Next, as to the source of the secondary hemor-rhage after ligature of the carotid. Recurrent pul-sation was detected in the temporal artery fourteen days after tying the main trunk, and it was not until

ten days later that hemorrhage supervened. More than this, at the autopsy, pretty firm clots were found in the proximal ends of both external and internal carotid. There can be little doubt, therefore, that the hemorrhage was recurrent, from the re-established circulation; and it occurred in a spongy, sloughing tissue, where no forceps could be made to hold, and no ligature could have been of avail. Could anything else have been done to check it besides cold, pressure and styptics, which were freely used? The only other expedient must have been ligature of the other carotid. But when we reflect that facial paralysis already existed, and the patient had already undergone section of the pneumogastric, we should hesitate long before diminishing still further the imperfect circulation of the brain.

The results following the section of the pneumogastric were trivial when compared with those recorded by physiologists from their experiments on the lower animals. But we must bear in mind that these experimenters divided *both* pneumogastric nerves, while in our patient *the right only* had been severed. It was divided below the point where the superior laryngeal is given off, but, of course, cut off all action of the recurrent laryngeal. Now the more important consequences of the division of both, as recorded by Dr. Dalton, are, 1st, A wheezing and difficult inspiration produced through the recurrent laryngeals by paralysis of the larynx and falling together of the vocal cords. 2d, A diminished frequency of the movements of respiration, followed by

passive engorgement of the lungs. 3d, Digestion is interfered with, and food accumulates in the œsophagus owing to its paralysis, and is regurgitated. Death takes place from failure of the respiration, which grows gradually slower and slower. After death, the lungs are found solidified, but not like ordinary inflammatory hepatization. They are shrunken, leathery and non-crepitant, of a purple color, and sink in water. In short, they present the appearances of passive congestion, continued for a considerable length of time.

In our patient, evidences of these changes were carefully looked for. The respiration was noted, and the lungs examined daily, by Dr. Buckingham. No paralysis of the larynx or œsophagus occurred. There was no marked diminution of the respiration. But there were evidences of passive congestion of the lung on the injured side, and not on the other. Three days after the injury, the pulse was 100, and the respiration 16. Expiration was longer than inspiration, with an asthmatic wheeze. Six days later, the respiration was 24 and the pulse 124. There was considerable dulness over the upper part of the right back. The next day, respiration 24, pulse 120. Upper two thirds of right back dull on percussion; bronchial respiration and bronchophony marked. Two days later, these symptoms were passing off, and the air entered the lung more freely. This obstruction was so entirely temporary, that, after death, both lungs were found alike œdematous and adherent to the chest, but no other changes existed.

The chills and vomiting and recurrent hemorrhages, day after day, which finally carried her off, present every symptom of pyæmia. Pains in the joints were also complained of; but although no depôts of pus were found *post mortem*, except the small abscess in the right cerebral hemisphere already noted, we think this one more probably due to lack of arterial blood from the carotid ligature, than to pyæmia: —

1st. Because paralysis ensued the next day after the ligature and was never recovered from, while the symptoms of pyæmia did not occur until three weeks afterwards.

2d. Because the softening of the cerebral substance and subsequent formation of pus occurred in the upper and anterior part of the right hemisphere, in just that portion directly supplied with blood by the carotid through the anterior and middle cerebral arteries, and not in the posterior lobe, or at the base of the brain, which derive their supply through the posterior cerebrals, cerebellar and other branches of the basilar, and thence through the vertebral and subclavian arteries.

No.	Name.	Age	Extent of Injury.	Treatment Before Entrance.	Complications.	
					Primary.	Secondary.
1	Lewis T. S. V. 176.	30	Incision opened cavity of mouth at root of tongue, between hyoid bone and thyroid cartilage.	Wound "sewed up"; leaving bleeding arteries.	Hemorrhage. Dyspnœa.	
2	Mary A. D. VII. 86.	17	Four incisions, (two transverse, two oblique) opening trachea and larynx so that air passed freely in respiration.	Wound closed externally, leaving trachea wound open.	Profuse hemorrhage. Insanity.	Œdema glotti dis.
3	Patrick P. VIII. 269.	31	Cavity of mouth opened above hyoid bone.	Wound partially closed.		
4	John R. VIII. 73.	45	Wound from one sterno-mastoid to the other, not opening mouth or larynx; both external jugular veins cut.		Delirium tremens. Hemorrhage.	
5	Thomas M. I. 49.	33	Larynx opened at its upper part.	Wound closed, leaving an artery bleeding.	Hemorrhage. Collapse.	
6	Ann S. XI. 202.	30	Trachea opened in upper ring; incision obliqne from sterno-mastoid muscle.	Wound closed, leaving "two or three" arteries bleeding.		
7	Thomas R. X. 74.	67	Epiglottis severed from its inferior attachments; vocal cords plainly visible.			Bronchitis.
8	Gorham, P. S. XVII. 30.	47	Submaxillary glaud wounded. Mouth and larynx not opened.	Wound closed; a bleeding artery left.	Delirium tremens.	
9	Peter P. XX. 234.	69	Trachea divided half across.	Hemorrhage controlled and wound closed.	Diarrhœa. Exhaustion.	
10	John H. XX. 246.	60	Three incisions; trachea partially divided in upper rings.	Wound closed; hemorrhage slight.	Emphysema.	
11	John H. V. 48.	35	Larynx opened above thyroid cartilage.		Delirium tremens. Patient made gashes in both wrists and in popliteal space.	
12	Sarah C. IV.	46	Trachea opened twice; just below thyroid cartilage, and four rings below. External wounds ragged.		Insanity.	

Treatment.	Result.	Surgeon.	Remarks.
Tracheotomy. Wound united deeply by silver wire sutures through thyroid cartilage and over hyoid bone. External wound closed.	Discharged, convalescent, after 11 days, wearing the silver wire without inconvenience.	Dr. Buckingham.	
Wounds in larynx united by silver wire sutures. Tracheotomy on second day. Wire sutures removed on 9th day.	Recovery perfect, 38 days.	Dr. Cheever.	
	Recovery, 9 days.	Dr. Stedman.	
Wound healed by granulation.	Recovery, 26 days.	Dr. Coolidge.	
Tracheotomy.	Death without reaction. 22 hours.	Dr. Cheever.	
Wound in trachea closed by silver wire. External wound apposed.	Recovery, 30 days.	Dr. Cheever.	
Tracheotomy. Wound united by silver wire passed deeply.	Recovery, 48 days.	Dr. Homans.	
Wound closed by granulation.	Recovery, 55 days.	Dr. Derby.	
Wound left to heal by granulation.	Death from exhaustion, 13 days.	Dr. Ropes.	
Wound healed by granulation.	Recovery, 39 days.	Dr. Homans.	
	Death from delirium tremens, 19 hours.	Dr. Thaxter.	
Wounds in trachea closed with silver wire sutures. External cut with silk.	Recovery, 24 days; wearing two silver wires over which the wound had closed. One year later the wires were found in place post mortem.	Dr. Stedman.	

No.	Name.	Age.	Extent of Injury.	Treatment Before Entrance.	Complications.	
					Primary.	Secondary.
13	Hannah D. VI.	39	External wound from inner edge of trapezius muscle downwards obliquely, to beyond the second ring of the trachea, dividing external and internal jugular veins, exposing but not dividing the common carotid artery, severing the pneumo-gastric nerve, and cutting the submaxillary gland.		Profuse hemorrhage from internal jugular vein.	Secondary hemorrhage on 6th day. Phagedæna. Salivation from wounded gland. Recurrent secondary hemorrhage on the 21st and 26th days and continuing at intervals until death. Pyæmia. Paralysis of arm and tongue. Strabismus.
14	Samuel H. 23. 68.	61	Wouud externally between thyroid cartilage and hyoid bone, five inches long. Pharynx opened.	Wound left open.	Profuse hemorrhage. Extreme depression.	Great dyspnœa.

Treatment.	Result.	Surgeon.	Remarks.
Internal jugular vein tied. Common carotid tied on 6th day, because of secondary hemorrhage.	Death on 42d day, from pyæmia and abscess of brain.	Dr. Buckingham.	Ligature of vein came away on 15th day, and that of carotid on 13th day after ligation. Wounds did badly from beginning. Division of pneumogastric nerve gave no decided symptoms.
Wound apposed by sutures.	Death from shock; 17 hours.	Dr. Derby.	

IV. TRACHEOTOMY.

This operation was performed fifteen times. Three times for cut throat; twice for œdema of the glottis, and once for epithelial disease of the vocal chords. Of these cases, the mortality was $16\frac{2}{3}$ per cent.

For croup, it was done nine times. Of these the mortality was $55\frac{5}{11}$ per cent. This result, although covering but a small number of cases, is, so far as it goes, excellent. The later statistics of the Hospital Ste Eugenie in Paris, give 208 recoveries in 813 operations, — or a mortality of about 75 per cent; and of a large number of cases collected in New York, about 60 to 70 per cent. Meanwhile, it has been estimated by some authorities, that of those *not* operated on, not one in fifty recovers. We cannot claim in our cases any special selections; nor were they all operated on early in the disease. The majority were livid when put on the table.

We are disposed to ascribe our success more to the very efficient steam atmosphere in which the patient is kept after operation. The Hospital being heated by steam, a small room is thoroughly, uniformly and permanently filled with steam by tapping one of the pipes, while the temperature is maintained at from 75° to 80° Fahrenheit.

We do not believe that other remedies are of service in membranous croup, unless air is admitted to the lungs. And we quite agree with Aitken ("Science and Practice of Medicine"), that, "the evidence is daily accumulating which shows that tracheotomy

ought to be resorted to much oftener as a remedy for croup, than it has hitherto been; and that, at a much earlier period in the disease, — not as a last resource, when death from asphyxia appears imminent, and after treatment of the most depressing kind. This is the secret of success in France, and other countries, &c."

Such, we believe to be the constantly growing tendency of all authorities, save Mr. Holmes, who says in the last edition of his work on the "Surgical Diseases of Children," p. 303: "There are surgeons who hold that tracheotomy does not materially complicate the case; *i. e.*, that a patient who would have recovered without the operation, will equally recover after it. I confess to holding a very different opinion. I think that of all the operations which we are commonly called on to perform on children, tracheotomy is the most dangerous, both in its immediate performance, and in the secondary complications; and I am sure that many cases recover under judicious treatment, which have been pronounced hopeless without operation, — for which reason I would not recommend tracheotomy while any prospect of recovery existed otherwise."

We are inclined to think that statistics will bear out our personal experience that children are very rarely lost *during* the operation; and that they are, not infrequently, *dead* at the time of operation, are resuscitated by artificial respiration, and ultimately recover.

No.	Name.	Age.	Disease or Injury.	Duration.	Complications. Primary.
1	Fanny S. II. 41.	5	Croup.	28 hours.	
2	Mary A. M. V. 255.	3	Croup.	60 hours.	Extreme dyspnœa.
3	Frank H. C. V. 135.	7	Croup.	10 days.	Great dyspnœa.
4	Susan M. X. 229.	8	Croup.	7 days.	Excessive dyspnœa.
5	Emma E. B. XI. 24.	3	Croup.	4 days.	
6	Edward G. XIII. 109.	2	Croup.		Great dyspnœa.
7	Estella M. VII. 20.	3½	Croup.	5 days.	Great dyspnœa and exhaustion.
8	Edward G. XXI. 14.	2½	Croup.	20 hours.	Extreme dyspnœa: (face livid.)
9	Roscoe F. N. XXI. 249.	14 mos.	Croup.	24 hours.	"Teething."
10	Thomas M. I. 49.	33	Cut throat, opening larynx and pharynx.	6 hours.	Collapse; hemorrhage; dyspnœa.
11	Lewis T. S. V. 176.	30	Cut throat, opening cavity of mouth.	3 hours.	Great dyspnœa.
12	Mary I. S. IX. 38.	30	Extreme dyspnœa from some unknown cause.	4 days.	
13	Daniel H. XI. 54.	26	Glandular enlargement about trachea and larynx; œdema of glottis.	7 hours.	Extreme dyspnœa.
14	Thomas R. X. 74.	67	Cut throat; wound opened larynx; commencing œdema glottidis.	1 hour.	
15	Willie P. XXI. 225.	7	Epithelial disease of vocal cords.	2 years.	Operation for removal of disease by external section of larynx.

COMPLICATIONS. Secondary.	Result.	Surgeon.	Remarks.
	Recovery 57 days.	Dr. Homans.	Patient at entrance, "livid, gasping and collapsed." Relief perfect.
Exhaustion.	Death 54 hours.	Dr. Buckingham.	
	Recovery 23 days.	Dr. Buckingham.	Relief immediate and permanent.
	Recovery 36 days.	Dr. Homans.	Respiration ceased in the midst of the operation, but was restored artificially, and the patient did well.
	Death 32 hours.	Dr. Cheever.	Child much exhausted at entrance. Relief partial.
Gradual exhaustion, steady decline.	Death 53 hours.	Dr. Cheever.	
	Death 50 hours.	Dr. Buckingham.	Relief temporary.
	Recovery 14 days.	Dr. Cheever.	Relief immediate and recovery progressive.
Convulsions, steady exhaustion.	Death 60 hours.	Dr. Cheever.	
	Death 22 hours from collapse.	Dr. Cheever.	Respiration improved by tracheotomy.
	Convalescent and discharged, 11 days.	Dr. Buckingham.	
	Recovery 30 days.	Mr. M. F. Gavin. (House-Surgeon).	Tracheotomy performed when the patient was asphyxiated and moribund.
	Recovery 18 days.	Mr. G. W. Gay. (House-Surgeon).	Tracheotomy performed after respiration had ceased. Instant and permanent relief
	Recovery 48 days.	Dr. Homans.	
	Recovery 56 days.	Dr. Cheever.	Tracheotomy performed preparatory to operation.

RECAPITULATION.

	Recovered.	Died.	Total.
For Croup, ...	4	5	9
For other causes, ...	5	1	6
Total, ...	9	6	15

Ratio of mortality for Croup, $55\frac{5}{11}$ per cent.
" " other causes, $16\frac{2}{3}$ per cent.

V. FOREIGN BODIES IN THE ŒSOPHAGUS. — THREE CASES OF ŒSOPHAGOTOMY.

Case 1. Mr. L——, a young man of temperate habits, and strong, muscular frame, an engineer by profession, while eating a dinner of chowder, on the 9th of November, 1866, suddenly became conscious that he had a bone in his throat. Violent strangling and efforts at ejection came on, followed by vomiting. The fragment was not dislodged. A physician, having arrived, caused him to masticate and swallow some ship-bread, without moving the foreign body. His throat being violently congested, he was directed to go home, and dress it with cold water, and if trouble continued, to send for me.

I saw him between two and three o'clock P.M., a little more than twenty-four hours after the accident. He was in much distress at each effort to swallow; his face was suffused; his eyes congested; the palate swollen, the uvula touching the tongue, and provok-

ing attempts to swallow an oversecretion of mucus which collected in the fauces. There was no swelling of the tonsils or tongue. The latter was coated; the pulse a little accelerated. Pains radiated up and down the neck from a point on a level with the cricoid cartilage, on the right side. He slept none the past night. Having placed him opposite a good light, I explored the pharynx with my forefinger. I was able to reach over and behind the larynx, and searched the base of the fauces and the folds around the epiglottis, as well as the back of the pharynx. I felt nothing. He vomited a little mucus, and expressed himself relieved. He now swallowed a whole goblet of water, without much wincing. I then left him, with directions to rub the neck gently with a liniment containing one-third laudanum, and to wait and see whether the distress returned. We both of us had hopes that the foreign body had passed down. This was on Saturday afternoon. I heard no more from him until Monday morning, when I was sent for early, and found him worse.

It seems that the distress, on swallowing, returned in two hours after I explored the fauces on Saturday, and had continued to increase. The two nights (Saturday and Sunday) were poor ones. He could sleep only a half hour at a time, by lying with his mouth open and allowing the saliva to dribble away. As soon as it accumulated, the effort to swallow woke him up. These naps were promoted by rubbing in the laudanum, of which he had used large quantities. He had swallowed nothing but water and a very little

strained broth. His efforts to swallow were attended with violent contortions. His suffering was evident and great. His aspect was worse every way. His tongue and throat the same as on Saturday. His pulse 116.

Having prepared a soft sponge, large enough to fill the œsophagus, and attached it to a long probang, I passed it down twice. The first time it was passed, he vomited; the second time, he fainted and declined another trial, which, indeed, I was not disposed to make. The sponge passed down almost to the sternum, and beyond the seat of pain, without meeting any obstruction. On withdrawing it the second time a single drop of fresh blood appeared on its left side, corresponding to the *right* side of the throat. No blood tinged the mucus expectorated, before or afterwards. He continued to refer the centre of pain to the right side of the cricoid cartilage. Tenderness on pressure was greater there than elsewhere, much greater than on the other side of the neck. Pain radiated down on the chest, upwards to the temple, and from the throat to the ear. I now gave him some morphia, directed his bowels to be cleared by a purgative enema, preparatory to using nutritive injections, and left him a few hours.

My diagnosis at this time was, that a small fragment of fish bone was imbedded in the wall of the œsophagus on the right side, opposite the cricoid cartilage, this being the line of junction of the pharynx and œsophagus. The reasons on which this opinion was based were: —

1st. The history of the case; it being now the third day since the accident, and the symptoms increasing in severity.

2d. The morbid appearances in the fauces, of the palate, uvula and tongue, were not sufficient to account for the symptoms.

3d. That the foreign body was small, because the fingers, lifting forward the larynx and trachea and embracing the œsophagus, could detect nothing externally, and the probang encountered no obstruction.

4th. That it was situated opposite the cricoid cartilage on the right side, and was imbedded there:

Because this was the narrowest part of the œsophagus;

Because this was the centre of pain and tenderness;

Because the drop of blood on the sponge corresponded to this side.

At 1.30 P. M., Dr. Buckingham saw him with me. Since I last saw him he had had a violent rigor, followed by heat and sweating. His pulse was 120, sharp and irritable; œdema of the right side of the neck had come on. His face was haggard; his eyes and skin much congested. He expressed the opinion that he could not endure his sufferings many nights and days longer. Dr. Buckingham concurred with me in the opinion that œsophagotomy should be attempted, as the only safe course; and that the operation was imperatively demanded and could do no harm.

1st. Because, if the diagnosis were correct, and the foreign body there, it was working through the

walls of the œsophagus, and could be reasonably reached in no other way.

2d. Because, if the diagnosis were incorrect, and the foreign body gone, the irritation it had excited was about to lead to abscess, which might end in suffocation, and for which the incisions of œsophagotomy must be the ultimate treatment.

The risks and chances having been detailed to the patient, he assented promptly to the operation. He was conveyed to the City Hospital, and the operation was begun at 7 P. M., with the very valuable assistance of Drs. Buckingham and Thaxter.

Operation.—The patient had a short, thick-set neck, with powerful muscles, and the veins were congested and full. The neck having been extended and the face turned to the opposite side, an incision was begun opposite the top of the thyroid cartilage, midway between it and the sterno-mastoid, and carried down parallel to the muscle, three and a half inches to the sternum. This divided the skin, superficial fascia and platysma. The edge of the sterno-mastoid was now sought for and dissected out.

The carotid sheath was next sought for and exposed with the point of a director, and then drawn outwards with the sterno-mastoid. Then the upper belly of the omo-hyoid muscle was denuded, and drawn outwards also. The edge of the sterno-hyoid next presented itself, the thyroid gland, and the side of the cricoid cartilage. A slow dissection with the director and the handle of the knife, and with the finger, was now

carried on through the cellular tissue, down between the œsophagus and the carotid sheath, which in the lower part of the incision lay in contact, side by side. The side of the œsophagus having been reached, the larynx and trachea were lifted and tilted over, and the foreign body felt for in vain.

The next step was to stretch the œsophagus from the inside, so that its walls might be presented in a single layer to the finger. To do this, the tube of a stomach-pump was introduced into the œsophagus by the fauces.

A careful search with the finger now revealed a foreign body lying between it and the stomach tube. Opposite the cricoid cartilage, at the junction of the pharynx and œsophagus, on the right side, some sharp, small substance was pricking through the walls of the œsophagus, a little towards the vertebral or back side of the gullet. The depth of the wound, and the oozing of blood, made it impossible to see the foreign body, which was sought for, and ultimately withdrawn, by touch alone. The intervening portion of the wall of the œsophagus was pricked through with a director and dressing forceps, and, after several flat scales had been removed, the main portion of the bone was drawn out. It consisted of a rough, sharp-edged, but flattened, piece of the fin-bone of a fish. No other pieces being detected the tube was withdrawn. The wound was left entirely open, as it was thought that it would be extremely difficult to remove any stitches placed in the œsophagus, even if they did good, while the freest exit should be allowed the

discharges. The wound of the gullet, being a lacerated one, did not bleed. The patient was given an injection, subcutaneously, of one-fourth of a grain of morphia, and removed to bed.

In reviewing the steps of an operation to reach the œsophagus by external incision, it appears, first of all, that this incision cannot well exceed three, to three and a half, inches in length. This is about the distance, in average necks, from the top of the thyroid cartilage to the sternum. If we cut above the thyroid cartilage we endanger the hypoglossal nerve and lingual artery, in a deep dissection; and, more important, the *superior laryngeal nerve.* The latter crosses the space between the hyoid bone and top of the thyroid cartilage to enter the larynx, and its section would destroy the sensibility of one vocal cord, and one-half of the glottis. Through a comparatively short incision, therefore, we are obliged to make a very deep dissection, down to the prevertebral muscles, and to draw various important structures out of harm's way as we proceed. First, the carotid sheath, containing the artery, vein and pneumogastric nerve, which approximate closer and closer towards the œsophagus, as we descend the neck. Above and below are the superior and inferior thyroid arteries. On the inside, the thyroid gland. Below the finger, the sympathetic nerve. And, finally, running up between the œsophagus and trachea, to the back of the larynx, the inferior, or *recurrent laryngeal nerve,* the motor nerve of the larynx, whose section would paralyze one-half of the glottis; and the partial

division of some filaments of which, in one case of œsophagotomy, led to a permanent alteration of the voice. This nerve, lying upon the front of the œsophagus principally, is to be avoided by opening the gullet towards its *posterior* part. The œsophagus is easier found also on the *left* side of the neck, as it naturally inclines to that side. And the rule has been laid down that œsophagotomy should be done on the left side as the place of election, unless we are sure of cutting down on the foreign body on the *right* side. The deeper dissection being carried on chiefly with the director, it is possible to reach the œsophagus not only *without injuring any nerves*, except the unimportant superficial branches of the anterior cervical plexus, but also, as we shall show in the second case, *without tying a vessel.*

The case went on favorably (we now omit all details), and in three weeks the œsophageal fistula closed.

Sequela. — After a closure of several months the œsophageal wound reopened. It remained open several months, and a portion of carious bone (apparently from the body of a cervical vertebra) was discharged. Slight angular curvature of the spine (about the 7th cervical) also existed. The fistula closed; and the patient is now (eighteen months since operation) well.

Nov. 1869. Has returned to his old vocation of *ship-engineer*, and is perfectly well.

Case 2. — On Friday, the 16th of November, 1866,

four days only after the preceding operation, there presented himself to me at the Surgical Room of the Boston Dispensary, Daniel B——, a young man of average strength and health. He stated that while hastily eating some cabbage at supper time, on Wednesday, the 14th, he felt some foreign substance lodge in the fauces, which, on reflection, he concluded to be a fragment of bone, boiled off from the meat with which the cabbage had been cooked. He had made many efforts to dislodge it, in vain. His nights had been sleepless; pain and difficulty on swallowing were nearly as great as in the first case. His pulse was 120; tongue foul. The sensation of a foreign body, the tenderness and so forth, were referred to about the level of the cricoid cartilage on the left side. The power of locating the exact spot where the foreign body might be, was not so clear as in the former case. The patient gave signs of severe suffering on trying to swallow. He had taken no food since the accident occurred. An inspection of the fauces revealed nothing of importance.

A sponge probang was gently passed down to the sternum. No obstruction was felt. No blood was brought up on the sponge. But the first expectoration following was slightly tinged with blood.

He now, as in the first case, expressed himself relieved, and swallowed a glass of cold water, with but little effort. He was now directed a full opiate, and to drink some broth, if not too painful. In other respects to let the throat alone, and to report himself on the following day.

The next morning he appeared, walking in a dejected, stooping attitude, the head being bent to the left, to relax and favor the muscles of that side. He declared himself much worse. The pain in swallowing had recurred in the evening previous. The use of the probang had been followed by a severe chill. He had had neither drink nor food. His fauces were a little more swollen, on inspection; the uvula pendulous and flabby, and the tongue thickly coated. There was no swelling of the tonsils. Efforts to swallow occasioned exquisite suffering. The mucus and saliva dribbled from his mouth, as he was unwilling to swallow them. A line extended from the spinous process of the cervical vertebræ to the central angle of the thyroid cartilage, measured half an inch more on the left, than on the right side. There was greater tenderness, but it was more diffused. The focus of soreness was still referred to the vicinity of the cricoid cartilage.

It was therefore supposed that a spicula of bone was imbedded in the wall of the œsophagus, near the cricoid cartilage; that it was still there, because of the persistence of the symptoms; that it was small, because it offered no resistance to the sponge probang, filling the œsophagus; that it was imbedded, because it had not passed down, and because the expectoration was tinged with blood.

The foreign body had now been in the throat *three days*, and neither food nor sleep had been obtained by the sufferer. His pulse was 120, sharp and irritable. He confessed to the habitual use of stimulants;

and he had much less muscular power than the former patient. The imperative necessity of some measure for relief was now apparent to the patient, as well as to the surgeon: the former readily consented to an operation. He was accordingly sent (Nov. 17th) to the City Hospital, and the operation was performed at 5 P. M., with the assistance of Dr. Thaxter.

Operation. — The incision was made on the *left* side. It was three and a half inches long, reaching from opposite the top of the thyroid cartilage to the sternum; starting midway between the sterno-mastoid and the larynx, it ran down parallel to the inner edge of that muscle. The skin and platysma having been divided, the edge of the sterno-mastoid was laid bare. Next, the upper belly of the omo-hyoid muscle was dissected out, and the lower boundary of the superior carotid triangle fairly exposed. The omo-hyoid was then drawn to the *inside*, or central line of the neck, — the reverse of the first operation, where it was drawn outwards. This second manœuvre afforded much more room than the other method. The carotid sheath was now plainly felt, and drawn outwards. Next, beneath the edge of the sterno-thyroid and sterno-hyoid muscles, an unusually large thyroid gland bulged into view. The veins on its surface were dilated, and the gland seemed puffed out, and full. By a gentle dissection with the director, the handle of the scalpel, and an occasional touch with the edge of the knife, this gland was lifted and turned over on its isthmus, without wounding either it or its vessels.

The inferior thyroid artery, especially, was enucleated from the cellular tissue, and preserved intact. The wall of the carotid sheath was now seen in contact with the trachea. A separation was effected with the director; and the artery drawn outwards, the thyroid and trachea inwards, with blunt retractors.

So little hemorrhage had taken place, that with a light reflected into the bottom of this deep wound, there could be plainly seen the silvery fascia and tendons of the prevertebral group of muscles, between two distinct walls, formed on the outside by the carotid sheath, on the inside by the œsophagus. No foreign body was found.

After some manipulation, the stomach tube was passed into the œsophagus by Dr. Thaxter.

I now decided to open the œsophagus, and explore within. A vertical incision was made upon the stomach tube, just below the cricoid cartilage, through the wall of the œsophagus, towards its posterior aspect. This wound having been dilated, the tube was withdrawn, and the forefinger passed into the œsophagus up to the metacarpus. Searching first above, I reached as high as the top of the larynx and epiglottis, in the fauces, without finding anything. Next turning the finger downwards, I felt, beneath the sternum, a long, slender, hard substance lying across the posterior wall of the œsophagus. Both ends were imbedded in the gullet, and the centre could not be lifted out. Passing down a director, upon my finger I picked one end free, drew it outwards, and freeing the other end, I withdrew, instead

of a bone, a common brass pin, an inch and a quarter long. It was blackened and corroded, and lay diagonally across the œsophagus, its head to the right side, just beneath the manubrium of the sternum. The head was entangled, and the point imbedded in the wall of the œsophagus.

As in the former case, the wound was left open.

Dec. 15. Four weeks since the operation. None of the liquids henceforward come out of the wound. Patient sits up all day; reads and amuses himself.

Discharged well, December 29th, six weeks since operation.

Sequela. — The œsophageal wound was re-opened by swallowing a large morsel of beef, about seven weeks after the operation; it closed spontaneously in a fortnight. The patient is now (eighteen months since operation) well.

Case 3.—February 26, 1868. M. M——, female, aged 60. Patient stated that in July last she swallowed about half a dozen pins, which she had removed from her dress and placed in her mouth, before taking a nap. On awaking she noticed a sharp tickling sensation in the throat just about the level of the cricoid cartilage, accompanied by a constant desire to swallow.

These symptoms gradually increased, till, at the expiration of three weeks, they became so intense that she called in medical aid. Two pins were removed from her throat, but without relief. Since then she has been gradually losing strength, and now, being

unable to work, owing to pain, loss of sleep and inanition, she comes to the Hospital, desirous of an operation to remove the foreign body which she is confident still remains in her throat.

The symptoms are constant pain, with a burning sensation just above the level of the cricoid cartilage, and a feeling of constriction, causing an incessant desire to swallow. These are increased by swallowing either fluids or solids, especially the latter; in fact she has been compelled to live upon a liquid diet for several weeks. Complains also of similar symptoms at a point just above the level of the sternum, but they are neither constant nor severe. Soon after commencement of present trouble she suffered, more or less, from pyrosis, which seemed to increase the irritation at the lower point.

Pressure upon the œsophagus laterally at the upper point gives severe pain, principally upon the left side; at the lower point, pressure in a posterior direction gives some pain, but not half as severe as above. A sponge probang was passed down, but no stricture or obstruction of any kind could be found.

No inflammation of the pharynx, and no appearance of its recent existence. Externally nothing abnormal. No history of carcinoma, and no symptoms of hysteria. Says she had always enjoyed good health till present trouble; digestion had previously been excellent, and was so now, her only difficulty being in swallowing, and that had increased rapidly within the last few weeks. Had grown weaker, day by day, till obliged to give up work.

Feb. 27. Tested by swallowing first fluid and then solid food. The former was swallowed more readily and with less pain than the latter, but in each case an instinctive hesitation and delay was observable. There seemed to be no trouble in the larynx or trachea. Respiration good; voice natural. She was seen in consultation by Dr. Thorndike, who concurred with Dr. Cheever, that the symptoms all pointed to a foreign body in the œsophagus, and that an operation for its removal was indicated.

Feb. 28. Symptoms increased a little, probably by examination.

Operation. — Etherized and placed upon the table. An incision was made, about half an inch to the left of the trachea and parallel with it, three inches in length, starting at a point opposite to the middle of the thyroid cartilage.

The subcutaneous tissues and fascia being divided with the knife, the remainder of the dissection was made with a director down to the œsophagus.

The sterno-mastoid was drawn to the outer side, the sterno-hyoid and sterno-thyroid to the inside, also the omo-hyoid. The œsophagus was reached in the superior carotid triangle. A No. 12 elastic catheter was passed down through the mouth, and the œsophagus cut through longitudinally upon it. An incision was made large enough to admit the index finger, and a thorough examination made, but no foreign body discovered. In the course of the dissection, the inferior thyroid artery was cut, also another small superficial artery. But very little blood was lost, and

the whole operation occupied about twenty minutes. The œsophagus was closed with silk sutures, and the external wound by four sutures, also. The sutures did not prevent the escape of air and fluid, and subsequently ulcerated out.

March 18. Nineteen days after operation. Dr. Cheever tested her ability to swallow. She took large and small swallows alternately, but not a drop escaped through the external wound. — Diet bread and milk, upon which she is gaining flesh rapidly.

28. Only a small, superficial granulating surface. Milk, bread and butter and steak swallowed without difficulty or hesitation. Entirely free from irritation and pain, which were so troublesome at time of entrance. Respiration good; voice natural. No swelling about seat of operation, which leaves but a small cicatrix. Discharged well. Requested to report at Hospital once a week, for a time.

Remarks. — At the time of the operation, two things were noticed: An indurated spot outside the œsophagus and near the cricoid cartilage; and a valvular condition of the mucous membrane of the œsophagus. Whether the first was the former resting-place of a pin, which had come through the walls of the œsophagus; or whether the last could explain the difficulty in swallowing, are questions unsolved. The operation, at any rate, did no harm. The patient left the Hospital in four weeks, — encouraged, and free from suffering.

SEQUELA. — After being closed six weeks, the œsophageal wound re-opened, after hard labor and exposure. The patient re-entered the Hospital. The fistula closed in a few weeks. She is now, four months since the operation, perfectly well.

1868, Sept. Six months since the operation. The fistula re-opened, and subsequently closed.

1869, Nov. The patient has not been seen for six months. At the date when last seen, one year since operation, she was well.

The following Table of *twenty-four* authenticated cases of œsophagotomy for foreign bodies, we have made as full and complete as the sources of information in our possession enabled us to. Some authorities we have had to quote at second hand, and there may be inaccuracies of page or date, but not of facts. We believe this table to be more complete than any other extant.

It has been objected by critics, that some of the cases (as Mr. Syme's) were *not cases of œsophagotomy* at all. We can only say that the distinguished surgeon places them under that caption in his works. We have also been criticized by others for not having collected *all* the cases of œsophagotomy, in our table.

Nothing would please us more than to receive *addenda* from these gentlemen.

NOTE. — Since this table was published, it has been incorporated into the second edition of "Holmes's Surgery," in England; and also into M. Terrier's Monograph,* in Paris, who characterizes it as, "un tableau des

* "De l'Œsophagotomie Externe," par L. Felix Terrier, Docteur en Médicine, etc. Paris, Baillière, 1870.

plus complets; puisque, malgré toutes nos recherches, nous n'avons pu y ajouter que quelques faits."

A single case (numbered 15) has been added by M. Terrier. We have also received the account of a second successful case (numbered 24) from our former house-surgeon, Dr. A. B. Atherton.

For an historical review of the operation, the reader is referred to the author's monograph.*

* Œsophagotomy for the removal of Foreign Bodies; with a history of the operation by David W. Cheever, M. D. Boston: (2d edition) James Campbell. 1868.

No.	Date.	Sex.	Nature of Foreign Body.	Point of Impaction.	Treatment before Operation.
1	1738	M	Portion of bone one inch long, six lines broad.	Œsophagus; where not stated; could be felt outside.	Attempts to push it down.
2	No date.		Probably a portion of bone.	Not stated.	Not stated.
3	1831	M	Portion of beef bone.	Œsophagus; lower part of neck.	Touched the foreign body; attempts to dislodge it.
4	1832	M	Large conical fragment of bone.	Œsophagus; lower part of neck.	Touched the body; every means tried to dislodge it.
5	1833		Spinous process of dorsal vertebra of a sheep.	Lower part of pharynx.	Emetics, and various attempts to dislodge it.
6	1842	M	Not stated.	Œsophagus — perforation of; lying on carotid.	Not stated.
7	1844	M	Portion of bone.	Could be felt outside projecting above clavicle.	Bleeding, tartar emetic in veins, belladonna enemata and 60 attempts with instruments.
8	1853	M	Small fish.	Pharynx; tail seen in fauces.	Vain attempts to withdraw through mouth.
9	1853	M	Fragment of beef bone.	Œsophagus in neck.	Attempts at extraction.
10	1854	F	One franc piece.	Upper part of œsophagus	Repeated efforts at extraction with Graefe's sound and forceps.
11	1855		Portion of bone.	Œsophagus; abscess formed.	Could not be reached by fauces.
12	1856	M	Gold tooth-plate containing a false incisor.	Junction of pharynx and œsophagus. No external projection.	Attempts at withdrawal with forceps; emetics.
13	1861		Thin piece of mutton bone one inch sq.	Œsophagus; no external projection.	Could not be touched by fauces.
14	1862		A coin.	Opposite top of sternum.	Coin touched by bougie.
15	1862	M	Fragment bone; 2 inches long.	Top of œsophagus.	Attempts to extract.
16	1863	M	Bone.	Not stated.	Not stated.
17	1864	F	Peach stone.	Not stated.	Not stated.
18	1866	M	Cod-fish bone.	Junction of pharynx and œsophagus. No projection.	Vomiting; exploration by finger and probang; rigors.
19	1866	M	Brass pin.	Below top of sternum. No projection.	Vomiting; long probang.
20	1867	M	Tooth-plate.	Opposite left cricoid.	Various explorations.
21	1867	F	Brass pin.	Apparently opposite left cricoid.	Attempts during four months.
22	1868	F	Supposed to be a pin.	Junction of pharynx and œsophagus.	Various attempts.
23	1869	F	Supposed mutton bone.	Opp. thyroid cart.	None.
24	1870	F	A cent. 1 inch diameter.	Junction phar. and œsoph.	Repeated efforts to remove.

Foreign bodies:—Authentic cases, 24; Deaths, 4; Recoveries, 20.

Operation, when Performed.	Result.	Cause of Death.	Operator.
Not stated.	Recovered.		Goursauld.
Not stated.	Recovered.		Roland.
Operation, twelfth day, left side.	Speedy recovery.		Bégin.
Operation eighth day, left side.	Recovered.		Bégin.
Operation after five weeks, on right side.	Death fifty-six hours after operation.	Pneumonia, existing at time of operation	Arnott.
Operation 8th day.	Recovered.		De Lavacherie.
Operation 4th day; bone swallowed.	Death two days after operation.	Collapse. Pharynx gangrenous, stomach inflamed.	Martini.
Operation after several days.	Recovery in six weeks.		Antoniesz.
Operation 9th day.	Death second day after operation.	Perforation front & behind. Retro-phar. abscess reach. stom.	Flaubert.
Operation 10th day.	Death third day after operation.	Retro-œsophageal abscess opening into pleura.	Demarquay.
Operation 16th day.	Recovery in two weeks.		Syme.
Operation 4th day, left side.	Recovery in four weeks; permanent alteration of voice.		Cock.
Operation 6th day.	Recovery in two weeks.		Syme.
Operation after two months.	Recovery; swallowed in in a week.		Syme.
Second day.	Recovery in one month.		Inzani.
Not stated.	Recovered.		Sonrièr.
Not stated.	Recovered.		Arnold.
Operation third day, right side.	Recovered.		Cheever.
Operation third day, left side.	Recovery in five weeks.		Cheever.
Operation third day.	Recovered.		Cock.
Operation after four months.	Recovered.		Hitchcock.
Operation after 8 months.	Recovered.		Cheever.
Operation on 10th day.	Œsophageal abscess opened. Recovered.		Maclean.
Operation 5th day.	Recovered.		Atherton.

Note. In cases 21, 22 and 23, no foreign body was found. The lapse of time (four and eight months after the swallowing of the pins) may have favored their escape, or becoming encysted outside the œsophagus. For the severity of the symptoms the reader is referred to the history of the cases.

VI. PERINEAL SECTION.

This operation was performed *sixteen times.* The cause for the operation was, in *fourteen*, old stricture, and in *two*, traumatic rupture of the urethra. Eight of the sixteen had retention of the urine when brought into the Hospital. Seven of these eight had extravasation of urine, or perineal or prostatic abscess. Four were tapped through the rectum as a temporary relief.

Eight were operated on by Syme's operation for perineal section; eight also were operated on by Cock's method, or the direct section.

Out of the sixteen, ten recovered, and six died. The mortality from Syme's and from Cock's operation was precisely the same, viz.: *thirty-seven per cent.* The average duration of convalescence was, after Syme's operation, 121 days; after Cock's operation, 96 days.

The operation for perineal section, however performed, has been disclaimed by the distinguished surgeon who gave his name to it, and is regarded by the best of the later authorities as an opprobrium, rather than an ornament of surgery. As a last resort, and a choice between life and death, it should undoubtedly be regarded. But in cases of extravasation, abscess with retention, or numerous fistulæ, it is the only chance for salvation, and is a legitimate, and even an indispensable operation. Such were more than one half (8 out of 14) of the cases of stricture detailed

below. The remaining cases were either of rupture of the urethra from violence, or old and worn out cases of stricture of many years' duration, with long and painful use of catheters and bougies, of false passages and of fistulæ. It is only at the last gasp that the miserable victim of stricture seeks the Hospital. And among such a class of cases, we regard a prompt opening of the urethra and bladder as the only safe course to pursue.

If, then, the necessity for external urethrotomy be conceded, it only remains to consider the merits of the different modes of operating.

By the older method (Syme's), we cut down slowly through the perineal centre, and seek to trace and open the displaced and altered portion of the uretha — an operation of great difficulty, and of slow execution. By the newer method (Cock's), we make a bold thrust into the perineal centre, carry the back of the knife down upon the finger in the rectum until we open the membranous urethra, and then guide the knife on into the bladder.

The following tables will give the reader the details of the cases treated by either method: —

No.	Name.	Age.	Injury or Disease.	Duration.	Complications.	
					Primary.	Secondary.
1	Albert C. C. 3. 99.	29	Stricture, impermeable to smallest sound.	13 months.	Numerous scrotal urinary fistulæ and abscesses	Repeated rigors and great depression. Dysentery.
2	Timothy L. 3. 187.	23	Impermeable stricture, following syphilis. Entered with retention of urine. Stricture in membraneous urethra.	10 months.	Tapped through rectum. Syphilis.	
3	Thomas W. 3. 257.	54	Impermeable strictures following gonorrhœa. Patient entered with retention.	36 years.	Tapped through rectum. Scrotum contained large abscess communicating with fistula.	Diarrhœa. Furunculi.
4	Daniel F. 8. 146.	22	Impermeable stricture, following gun-shot wound through perineum.	2 years.	Perineal fistulæ, through which all the urine passed.	Cystitis.
5	William C. M. 10. 194.	21	Traumatic rupture of urethra from a blow.	10 days.	Large perineal abscess. Fracture of ischium, and of tibia and fibula.	Great depression. Delirium. Necrosis of ischium. Bedsores
6	James D. 11. 105.	44	Impermeable stricture. Patient entered with retention. Stricture at bulbous portion.	7 years.	Tapped through rectum. Abscess at root of penis.	
7	Henry K. 12. 195.	26	Prostatic abscess and numerous fistulæ. Urinary infiltration involving penis, scrotum and perineum.	5 years.	Patient in a very debilitated state	
8	William M. 15. 95.	36	Impermeable stricture.	10 years.	Abscess of prostate. Perineal fistulæ. Great debility.	Abscess, Otorrhœa. Pyæmia.
9	Edward B. 15. 104.	50	Impermeable stricture in cavernous and in bulbous portions of urethra.	10 years.	Retention of urine, requiring tapping per rectum. Phymosis from infiltration. Exhaustion.	Erysipelas. Progressive exhaustion. Delirium. Bedsores.
10	John G. 13. 195.	33	Impermeable stricture at membranous portion.	10 years.	Urinary fistula at bulb.	Cystitis. Erysipelas.
11	Charles C. B. 16. 198	32	Stricture in membranous portion. Impermeable.	5 years.	Intermittent fever. Enlarged prostate.	

Operation.	Result.	Surgeon.	Remarks.
Stricture and adjacent portion of urethra divided.	Recovery 110 days, with partial relief.	Dr. Buckingham.	The patient was in a very poor condition at the time of the operation, having urinated through the scrotal fistulæ six months before entrance.
Section by Syme's method.	Recovery 102 days, with small urinary fistula in perineum. Patient passing No. 7 catheter.	Dr. Cheever.	
Section by Syme's method.	Recovery, perfect, 169 days.	Dr. Buckingham.	
Urethra opened into bladder through stricture, by Syme's method.	Recovery, partial, 150 days.	Dr. Coolidge.	Cystitis continued at time of discharge.
Perineum opened and large abscess evacuated.	Death in 80 days from exhaustion.	Dr. Homans.	
Section by direct method, single thrust through perineal centre. (Cock's.)	Recovery 35 days, with a very small perineal fistula.	Dr. Cheever.	Patient out of bed and convalescent, taking a No. 7 catheter, three weeks after operation.
Section by Syme's method with grooved staff.	Recovery with great improvement, 75 days.	Dr. Buckingham.	
Section by Cock's method.	Death 50 days, peritonitis and pyæmia.	Dr. Cheever.	The case progressed very favorably the first month after operation, and the stricture was then dilated by Holt's instrument. Unfavorable symptoms developed soon after. The bladder was found *post mortem* to be very much thickened and contracted.
Section by Syme's method.	Death 20 days from pyæmia.	Dr. Cheever.	Patient a very poor subject from the beginning.
Section by Cock's method.	Recovery 98 days, with a small fistula in perineum.	Dr. Cheever.	Gradual dilatation commenced on 6th day. Discharged using No. 6.
Section by Cock's method.	Discharged, much relieved. (Perineal fistula.) 42 days.	Dr. Thorndike.	Gradual dilatation commenced 31 days after operation. Discharged with No. 9 bougie.

No.	Name.	Age.	Injury or Disease.	Complications.		Secondary.
				Duration.	Primary.	
12	George C. R. 16. 174.	39	Impermeable stricture in bulbous urethra, with retention of urine	7 years.	Abscess of prostate.	Great exhaustion. Diarrhœa.
13	Edward D. 18. 269.	50	Impermeable stricture in membranous urethra, with perineal fistula from former operation.	18 months.		Chills. Progressive exhaustion.
14	John E. 21. 135.	36	Impermeable stricture in membranous urethra.	18 years.	Very numerous urinary fistulæ, the scrotum being riddled; condition very low.	Secondary hemorrhage. Exhaustion.
15	Francis L. 21. 266.	24	Traumatic rupture of membranous and bulbous urethra from fall; blow received in perineum.	14 hours.		Repeated chills.
16	George W. 22. 105.	59	Impermeable stricture with retention of urine.	14 years.		Peritonitis. Abcess in abdominal walls.

(*Continued.*)

Operation.	Result.	Surgeon.	Remarks.
Section by Cock's method, after a month of palliative treatment.	Recovery with perineal fistula 205 days.	Dr. Thorndike.	Urethra fully dilated.
Section by Syme's method, terminating in Cock's direct thrust.	Death, 25 days; pyæmia.	Dr. Ropes.	
Section by Cock's method.	Death from exhaustion, 10 days.	Dr. Cheever.	
Section by Cock's method.	Death 13 days.	Dr. Cheever.	Death from pyæmia.
Section by Cock's method.	Recovered.	Dr. Thorndike.	Abscess resolved.

RECAPITULATION.

Recovered . .	Syme's, 5	Cock's, 5	Total, 10
Died . . .	" 3	" 3	" 6
	8	8	16

Ratio of mortality, Syme's, 37 per cent.; Cock's, 37 per cent. Average of convalescence, Syme's, 121 days; Cock's, 96 days.

Although somewhat interested in Cock's method, since we first introduced it here in 1867,* yet we would not be considered the special advocate of either operation, but will try to point out the advantages of the direct mode in certain cases.

Whenever we can operate on a guide in the urethra Syme's operation is to be preferred. Indeed, in such cases it may be an open question whether the patients are subjects for external urethrotomy at all, since the stricture into which a bougie can be passed can be dilated gradually, or forcibly, from within. It is for perineal section without a guide, after traumatic rupture, or in impermeable stricture, especially when there exist extravasation or abscess, that the direct method of Cock is to be considered and adopted. In such cases, immediate relief is urgently demanded, and a thrust into the membranous urethra cannot *a priori* be thought more hazardous than the incisions of Lithotomy. We substitute, too, a single clean incision for a prolonged hacking of parts already inflamed, and perhaps sloughing.

The operation is, however, limited in application. For in cases of impermeable stricture which have not gone so far as to cause extravasation and abscess, and where, consequently, perineal incisions are not imperative, we may more safely tap through the rectum, or over the pubes, and await until the urethra has relaxed before attempting catheterization.

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* Vide "Surgical Cases in 1867."

VII. LITHOTOMY.

The operation of Lithotrity was done once, and Lithotomy five times; all of whom recovered. The lateral mode of operating was employed twice, and the bi-lateral three times. Two of the patients were children, and three adults.

One case, (numbered 5), was noteworthy on account of the age — 68 years — of the patient — his enfeebled condition, and the size of the stone. There were two calculi, of which the larger measured in its long circumference *seven* inches, and in its shorter, *five* inches. It weighed $2\frac{3}{4}$ ounces, and was extracted, with some difficulty, by the bi-lateral method. The patient made a good recovery.

CASES OF LITHOTOMY.

No.	Name.	Age.	Complications.		Operation.	Result.	Surgeon.	Remarks.
			Primary.	Secondary.				
1	Albert B. 9. 217.	29	Retention of urine. Lithotrity.	Diarrhœa.	Lateral.	Recovery 31 days.	Dr. Thorndike.	Stone of size of hazel nut. Symptoms five weeks before operation. Urine flowed through urethra after eight days.
2	Thomas J. 11. 5.	4½	Ascarides recti.		Lateral.	Recovery 22 days.	Dr. Cheever.	Symptoms two years. Stone half an inch in diameter.
3	Anthony D. 17. 163.	17			Bi-lateral.	Recovery 35 days.	Dr. Cheever.	Symptoms two years. Stone 1¼ inch in diameter. Urine through urethra after 12 days.
4	William N. 20. 69.	6			Bi-lateral.	Recovery 17 days.	Dr. Ropes.	Urine through urethra on 6th day. Duration of disease unknown. Stone of "large" size.
5	James L. 21. 32.	68	Great exhaustion. Bed sores.	Collapse and diarrhœa.	Bi-lateral, by semilunar external incision.	Recovery 40 days.	Dr. Cheever.	Symptoms of one year. Two calculi, one, size of chestnut; the other, ovoid, 7 in. by 5 in. in diameter.

VIII. THE RADICAL CURE OF HERNIA.

A synopsis of twenty-four cases of operation for the cure of Hernia is subjoined. A considerable number of these were my private operations; the remainder were Hospital cases, operated on by the other surgeons, as well as myself. The methods of Gerdy, Velpeau, Chisholm and Wood were employed, — the last in the great majority of cases.

Mr. Wood's views and publications are well known. He claims, as peculiar to his operation: —

First, To invaginate the spermatic fascia only, and to place the denuded tissues in the most favorable condition for adhesion, subcutaneously.

Second, To draw together and tend to close, rather than dilate, the tendinous walls of the inguinal canal, by wire sutures, which are not prone to ulcerate, and which are subcutaneous.

Third, To draw forward and fasten the conjoined tendon to the invaginated plug of fascia and lymph, and to the anterior walls; and thus to obviate the tendency to future re-opening at the inner ring.

The operation described as his *second* method was done most frequently, though additional stitches were sometimes passed. It is performed as follows: —

The patient is etherized, and the hernia reduced. An incision, about an inch and a quarter long, is made through the skin of the scrotum over the sac. The skin is subcutaneously separated from the spermatic fascia which invests the cord and tunica va-

ginalis, and in which the testis is loosely slung. This separation is carried so far, that the spermatic fascia can be pushed up and invaginated, without drawing in the skin. The finger is then carried up into the inguinal canal, carrying this fascia and the hernial sac before it. The finger is hooked under the inner pillar and conjoined tendon, as high up near the inner ring as can be reached; the cord, meanwhile, lies behind the finger, in the fold behind Poupart's ligament, and out of harm's way. The *transversalis fascia* and the epigastric artery lie behind the finger. The needle, passed up on the finger, is made to perforate the conjoined tendon and inner pillar and skin, and one end of wire hooked on, withdrawn through the scrotum, and disengaged from the needle. The latter is now passed up unthreaded, and perforating the outer pillar and skin, the other end of wire is hooked on and withdrawn, and unhooked. A loop is thus left above, and two free ends below. Then a third stitch is taken across the fascia and sac, in the scrotal incision, clearing the cord, and the wire drawn through that and disengaged. Finally, the lower wires are twisted together, drawn up into the inguinal canal, by pulling on the loop above, and the latter then firmly twisted down on them, in the puncture of the skin of the abdomen. The ends and loop are bent over a roller and fastened, and the hernial opening is thus occluded. After-treatment, with horizontal position, spica bandage, etc., the wires can be left in from ten to fourteen days, before loosening, and then withdrawn.

Eventually, a truss is worn for six months; and if the operation succeed, the canal is firmly blocked by the invaginated tissues and lymph, and the tendinous openings and conjoined tendon adhere together.

Wood's pins, for infantile cases, were used once.

Gerdy's method is by stitching up the invaginated scrotum and sac to the inguinal canal and skin of the abdomen by several loops of ligature, whose free ends are tied over quills on the outside, and whose bellies hold up the invagination. The invaginated skin is then denuded by ammonia.

Velpeau's method is by subcutaneous scarification of the inguinal canal, and the application of pressure.

Chisholm's operation aims to leave a subcutaneous wire stitch around the outer ring permanently.

Wood's operation for the cure of femoral hernia, which he describes, but had never performed, we did on a young woman, with temporary success only, as follows:—

A short incision was made over the tumor. The hernia needle first penetrated the iliac portion of the fascia lata near the saphenous opening: then, emerging, it was directed up beside the femoral vein, and thence under and through Poupart's ligament and the skin of the abdomen. To this needle-point was threaded one end of wire which was drawn down and detached. Next, the needle was passed in and out through the pubic portion of the fascia lata, and thence on through Gimbernat's ligament and out through the skin of the abdomen, where the other end of the wire was threaded, drawn down and detached.

Finally, a cross-stitch was taken in the sac and fascia, and the whole thing twisted down, bringing Poupart's ligament down near the fascia of the thigh, and thus tending to occlude the crural canal.

The difficulties and risks of the operation are, the proximity of the great vein, the danger of striking the epigastric artery, the rigidity of the crural canal and arch, and the small amount of fascia which is movable enough to be invaginated. The danger is greater, the chances of cure less, than in the inguinal operation.

The patient did well; a fair amount of lymph was deposited; and the rupture remained up five months.

One child of eight years was operated on three times, without success. First, by Velpeau's method; next, by Chisholm's, and finally by Wood's.

Another lad was twice operated on by Wood's method without other result than abscesses. The surgeon (Dr. Homans) then cut boldly down over the inguinal region and sewed the pillars together with wire. Considerable inflammation and a great cicatrix followed, and the child left the Hospital, well.

One young child, with enormous double hydrocele and hernia, was so relieved by operation that the hydrocele was cured, and the rings so diminished that the rupture was easily retained by a truss, which, as he grows up, may complete the cure.

Two cases were fatal, both by Wood's method. The first, a young man, had sloughing of the scrotum, which entirely denuded the testicles and penis. He rallied from this, and nature covered up the

naked organs with granulations, and finally skin. Meanwhile he suffered from repeated abscesses in the groin, and finally sank and died with burrowing of pus within the pelvis, and necrosis.

The second, a man of 40, died of pyæmia on the fourth day after the operation.

The table of results, annexed, speaks for itself. Hernia has long been one of the *opprobria* of surgery. To cure it, no operation is certain. The operation of Mr. Wood seems the most reasonable one proposed. It will cure a certain number of children and young adults. It will fail to cure others. Mr. Wood, it must be remembered, claims some 70 per cent of success. We can show barely 25 per cent.

The most favorable age to operate between, is five and twelve years. The mortality and the danger are no greater than after other operations of equal magnitude.

CASE.	SEX.	AGE.	NATURE OF HERNIA.	MODE OF OPERATION.
1	Male.	7	Right oblique Inguinal.	Wire setons (Gerdy's method.)
2	Male.	11	Right oblique Inguinal.	Wires, by Wood's first method.
3	Male.	6	Left oblique Inguinal.	Silk, by Wood's first method.
4	Male.	8	Right oblique Inguinal.	Wires, by Wood's 2d method.
5	Male.	9	Right oblique Inguinal.	Wires, by Wood's second method.
6 & 7	Male.	35	*Double* oblique Inguinal.	Wires, by Wood's 2d method.
8	Male.	13	Right oblique Inguinal.	Wires, by Wood's second method.
9	Male.	45	*Direct*; torn by kick of a horse.	Wires, by Wood's second method.
10	Male.	22	Right oblique Inguinal.	Wires, by Wood's second method.
11	Male.	22 mos.	Right oblique Inguinal.	Pins (Wood's).
12	Male.	48	Right ob lique Inguinal.	Wires, by Wood's second method.
13	Male.	1	Right oblique Inguinal.	Wires, by Wood's method.
14 & 15	Male.	4	*Double* congenital, with congenital Hydrocele.	Wires, by Wood's second method.
16	Male.	23	Right oblique Inguinal.	Wires, by Wood's second method.
17	Female.	21	Left *Femoral.*	Wires, as proposed by Wood.
18	Male.	10	Left oblique Inguinal.	Operation begun, and abandoned; hernia adhering to outer ring.
19	Male.	22	Left oblique Inguinal.	Wires, by Wood's second method.
20	Male.	23	Left oblique Inguinal.	Wires, by Wood's second method.
21	Male.	25	Oblique Inguinal.	Wood's second method.
22	Male.	7	Oblique Inguinal.	Three operations; two Wood's, one by direct incision.
23	Male.	8	Oblique Inguinal.	Three operations, by Velpeau's, Chisholm's and Wood's methods.
24	Male.	24	Oblique Inguinal.	Wood's second method.
25	Male.	40	Oblique Inguinal.	Wood's second method.

APPEARANCE AFTER OPERATION.	TRUSS. OCCUPATION.	SUCCESS.	FAILURE.	ULTIMATE RESULT.
No impulse. Large plug of lymph.	Truss.		1	Truss neglected; child scorbutic. Lymph absorbed at end of five months. Hernia down.
Moderate effusion.	Truss for a few week.	1		No relapse. Lost sight of at end of four months.
Sutures sloughed through.	Truss.		1	Failure.
No impulse. Firm effusion.	No truss.		1	At end of eight months, lymph absorbed. Bulging at internal ring.
No impulse. Firm effusion.	No truss.			Lost sight of.
One side occluded; the other not.	Double truss. Operative.		2	Both ruptures recurred. *Great obesity* at time of operation.
No impulse. Varicocele.	Tr. a year. Storeboy.	1		Fair success at end of two years.
Some impulse. Rupture reduced two-thirds in size.	Tr. Hatter.		1	Gradually enlarged again.
No impulse. Moderate effusion.	No truss. Sailor.		1	At end of one year, recurred as bubonocele.
No impulse. Plug of lymph very large.	Soft pad truss		1	Recurred, with whooping cough.
No impulse. Small effusion.	Truss. Laborer.		1	Reenrred, with cough, at end of three months. At end of one year still much diminished.
Ring too small to get finger in deep enough.	Truss.		1	Broke down at once.
Rings very large, sac on left side very large and thick.	Double truss.	1		At end of one year slight impulse on both sides. Do not come down when truss is removed. No hydrocele.
No impulse. Considerable suppuration.	Truss. Carpenter		1	End of ten months, some impulse. Lymph absorbed.
No improvement. Small effusion.	Wood's Femoral Truss. Servant.			At end of five months, failed.
			1	
Slight improvement. Small effusion.	Truss. Merchant.	1		Well.
No improvement. Large effusion.	Truss. Clerk.	1		Well.
Moderate Lymph.	Laborer.		1	Broken down soon.
Firm plug.	Child.	1		Well.
Abscesses.	Child.		1	Failed.
Repeated and deep abscesses.	Laborer.		1	Died.
Sloughing.	Clergyman.		1	Died.

Completed Cases - - - - - - - - -	24	
Entire and permanent Cures - - - - - -	3	or 12 per cent.
Much relieved; fair results - - - - - -	3	" 12 per cent.
Deaths - - - - - - - - - - - -	2	" 8 per cent.
Failures - - - - - - - - - - -	16	" 66 per cent.

IX. STRANGULATED HERNIA.

We have *thirteen* cases of strangulated hernia. Of these, three were returned by taxis, and ten underwent herniotomy. The entire ten who were operated on had intestine in the sac. Vomiting had taken place in all but two. None recovered where the strangulation had existed more than twenty-four hours. The fatal cases had been strangulated from two to six days. This may explain the large mortality of 70 per cent. The sac was opened in every case but one. The latter recovered.

Most of these patients were brought to the hospital after days of neglect.

In our private practice we can show results more near the average, viz.: seventeen cases; ten recoveries and seven deaths — a mortality of 41 per cent. The extremes of age, also, are included among these latter cases; from an infant of eleven weeks, to an old man, past 90 years — both of whom recovered.

Delay is the fatal element in cases of strangulation. An early opening of the sac is rarely followed by those serious consequences which an operation entails when it deals with serous membranes already inflamed. The congested condition of the bowel too — if no worse state have supervened —adds a serious peril, in returning it into the peritoneal cavity.

Next to the perils of delay, we should put those of violent taxis, active cathartics, and the use of opium.

The first often damages the strictured gut more than the original accident. The second maintains vomiting, though it does not awaken peristaltic action. The third masks the symptoms, and leads to a deceptive calm and a fatal procrastination.

Before giving a tabular view of the cases, we will allude to one manœuvre, which we have several times used with success in employing the taxis. It is, while making gentle pressure with the left hand on the hernial sac, to stroke back, deeply and forcibly, with the right hand, the abdominal contents, from the region of the rings, upwards. In this way, the escaped bowel has, with us, twice drawn itself back into the abdomen.

No.	Name.	Age.	Variety of Hernia.	Duration of Hernia.	Duration of Strangulation.	Symptoms.	Operation.
1	Bridget C. 1. 51	42	Fem.	5 years.	24 hours.	Collapse, vomiting. Tumor well marked.	Inci'n aft'r taxis under ether. Sac not opened.
2	Susan H. 1. 81.	40	Fem. l.	1 year.	12 hours.	Great depression; pain and vomiting. Tumor well defined	Incision after moderate taxis under ether. Sac opened.
3	Anne M. 1. 175.	37	Fem. r.	5 years.	6 days.(?)	Vomiting, pain, and great depression. Tumor discolored at its summit.	Incision. Sac opened.
4	Eleanor C. F. 1. 244.	38	Ing. r.	5 years.	3 days.	"Colic," vomiting, great pain, and exhaustion.	Taxis under ether. Incision 3 days after entrance. Sac opened.
5	Charles M. 5. 66.	35	Ing. l.	2 years.	12 hours.	Vomiting and general distress. Scrotum much enlarged and tender.	Ice, taxis and ether without success. Incision. Sac opened.
6	Nathan L. 9. 131.		Ing. r.		4 days.	Vomiting and hiccough. Tumor of hernia quite large.	Incision. Sac opened. Gangrenous intestine removed & adjacent healthy portion stitched together.
7	John J. D. 11. 40.	17	Ing. r.	11 years.	21 hours.	Pain and vomiting with depression.	Incision after taxis had been made without avail under ether. Sac opened. Wound drawn together with silver sutures, the inguinal pillars being included.
8	Sarah C. 15. 10.	50	Fem.	4 years.	4 days.	Extreme depression. Tumor small.	Incision. Sac opened.
9	Charles S. 15. 114.	48	Ing. l.	2 years.	6 days.	Stercoraceous, vomiting; constipation 8 days. Tumor small & very tender.	Incision. Sac opened.
10	Charles B. 17. 18.	23	Fem. r.	10 years.	27 hours.	Vomiting, great depression. Scrotum much enlarged and discolored.	Incision. Sac opened.
11	Bridget S. 17. 181.	38	Fem. r.	4 years.	6 hours.	Vomiting, pain and general distress.	Taxis.
12	Bridget S. 20. 54. (Same as above).	38	Fem.	4 years.	21 hours.	Vomiting, pain and collapse.	Ice to tumor half an hour. Reduction with taxis easy.
13	John S. 24. 40.	34	Inguinal.	3 years.	10 hours.		Ice bag to tumors; taxis.

Contents of Sac.	Result.	Surgeon.	Remarks.
Intestine.	Recovery 34 days.	Dr. Cheever.	The constriction was at the falciform border of the fascia lata.
Intestine.	Death 4 days.	Dr. Cheever.	Intestine black. No dejection after the operation. Death from peritonitis.
Adherent intestine; bloody serum.	Death 8 Days.	Dr. Cheever.	Post mortem examination found intestine still constricted by peritoneum, and in a sphacelated condition. Stercoraceous vomiting before death.
Intestine of dark brown color. Bloody serum.	Death 3 hours, from shock.	Dr. Thaxter.	
Intestine and omentum much congested, with ℥i bloody serum.	Recovery 24 days.	Dr. Thaxter.	
Intestines already gangrenous, depleted; fœcal matter & bloody serum in large amount.	Death immediate from shock.	Dr. Buckingham.	The patient was in a very low condition at entrance, too exhausted to give a reliable account of his case. He had been under medical care "three or four days."
Intestine considerably congested.	Recovery 62 days.	Dr. Cheever.	The patient was discharged wearing the silver sutures with a prospect of a radical cure of the hernia. Recovery complicated with rheumatism; six months after discharge from Hospital, wires ulcerated out and hernia returned.
Intestine in a gangrenous condition.	Death, five hours, from shock and exhaustion.	Dr. Thaxter.	The patient was an emigrant, had suffered four days on ship board from the strangulation, and was much reduced.
Congested intestines, with ℥ii. of bloody serum.	Death 60 hours.	Dr. Cheever.	Case complicated with fully developed trichiniasis, determined post mortem.
Twelve inches of dark colored Intestine.	Death, 74 hours, from peritonitis.	Dr. Cheever.	
	Recovery 3 days.	Dr. Derby.	
	Recovery 2 days.	Dr. Ropes.	
	Recovery 2 days.	Dr. Ropes.	

X. FRACTURES.

In looking over the details of *one thousand and forty-six* fractures, we shall speak first of their relative frequency: next give a brief review of the fractures of the skull, and of the more interesting points of the other fractures: then detail the fractures of the spine, and, finally, the compound fractures: —

RELATIVE FREQUENCY OF 1,046 FRACTURES.

Tibia and Fibula	149
Femur	131
Radius	124
Clavicle	102
Humerus	94
Radius and Ulna	74
Fingers	58
Ribs	53
Skull	46
Fibula	42
Tibia	30
Lower Jaw	28
Metacarpus	21
Ulna	15
Pelvis	11
Patella	11
Tarsus	7
Nasal Bones	7
Toes	6
Scapula	6
Coracoid Process	6
Both Legs	5
Both Legs and Femur	4
Many Bones	3
Both Femurs	3
Carried forward	1,036

Brought forward	1036
Upper Jaw	3
Spine	2
Metatarsus	2
Both Humeri	1
Carpus	1
Sternum	1
	1,046

NOTE. — This table includes both *out-patients* and those treated in the *wards*.

In the above series, we find that fractures of the tibia and fibula together, were three to four times as numerous as of either bone alone. On the other hand, fracture of the radius alone, was much more frequent than that of the radius and ulna together, and eight times more frequent than of the ulna alone.

The *Skull* was fractured thirty-three times. We have also eight fractures of the base, verified by autopsies; one case of diffused contusion of the brain, and three severe fractures of the upper jaw. There were also eight severe concussions.

The ratio of mortality was as follows: —

Of all the injuries	63	per cent.
Of the (33.) fractures of the skull	66	" "
Of the (24.) fractures of the vault	62½	" "
Of the (8.) fractures of the base	100	" "
Of (12.) fractures of the vault *not* trephined	59½	" "
Of (10.) fractures of the vault *trephined*	60	" "
Of (6.) fractures of the vault elevated, or sawed	66	" "
Of diffused contusion of the brain	100	" "
Of (3.) fractures of the upper jaw	66	" "
Of (8.) concussions of the brain	37	" "

By these results we learn that, in this series of cases, instrumental interference did not alter the general average of fatality of injuries of the head. The ratio of mortality of those trephined was practically no better than of those not trephined; and yet in individual instances we undoubtedly saved life, as in the following cases: —

Two cases of compound, punctured and depressed fracture of the vault were trephined, and both recovered. In neither were there any cerebral symptons on entrance.

(Service of Dr. Cheever.) The first had a small, sharp cut depression, and on trephining, extensive splintering of the inner table was found, with loose fragments lying on the dura mater, which must have given rise to necrosis and meningitis, unless they had been removed.

(Service of Dr. Thaxter.) In the second case there were no cerebral symptoms until the third day, when one pupil became sluggish, and the pulse slow and intermittent. The operation found the skull very vascular from commencing inflammation, and the periosteum very loosely adherent. Splintering of the inner table, and a slower recovery than in the first case.

(Service of Dr. Cheever.) There was one case without fracture, with unequal pupils, rapid pulse and great restlessness, which terminated fatally, and

in which a diffused contusion of the brain was found. Minute, miliary clots were scattered through the brain in the base and near the lateral ventricles. In some of these extravasations yellow softening had taken place.

Injuries of the skull were causes of pyæmia in two cases — of whom one died, and one recovered.

(Service of Dr. Thaxter.) *Large compound depressed fracture of skull, terminating in pyæmia; purulent deposits in the lungs, and death.* The patient was struck by a locomotive engine, and knocked down backwards. One hour after the accident he was conscious; skin normal; respiration 15; pulse 56 and soft; pupils contracted.

Dr. Thaxter enlarged the external wound, and found a large, depressed fracture, two inches by one, driven in and wedged. There were also three fissures. The depressed fragment was removed with a Hey's saw, and the dura mater found wounded, with brain protruding. The patient survived one week. He remained torpid, with rather a slow pulse, until the sixth day, when he had convulsions and obstructed respiration. The trouble in breathing increased until his death.

At the autopsy, it was found that the fracture had laid open the frontal sinus and extended through the cribriform plate of the ethmoid. The brain was here softened, discolored and offensive. The lower lobes of both lungs contained numerous soft, circumscribed puriform deposits, without induration, and quite offensive. The other organs were healthy.

(Service of Dr. Homans.) Fissure of the skull, with depression; pyæmia; recovery.

October 22d. — A healthy laborer, aged 28, was struck on the head by the handle of a crank, by which a ton weight was being raised. He did not become unconscious. The integuments were lacerated over the right vertex. The pericranium is torn off for a space half an inch square. One inch and a half above the eyebrow is a linear fracture of the skull, three-fourths of an inch long, and probably extending farther beneath the soft parts. The upper border is depressed the thickness of a case knife. Severe headache. Pulse 62. No vomiting. Converses rationally.

25th. — Pulse 52. Discharge from wound; a slight rigor, followed by fever and headache.

26th. — Sweats freely; sensation of weight at stomach, and difficulty in passing water.

29th. — One week since accident. Complains of pain in left shoulder and in left popliteal space. Pulse 99; skin hot; pupils alike. Profuse sweats. Wound healthy.

31st. — Nine days since accident. In left popliteal space is a reddened tumor, without fluctuation. No injury there at time of accident. No chills since the first, but paroxysmal fever.

Nov. 1st. — Right pupil more contracted than left, but equally mobile. Pulse 66. No cerebral symptoms. Quinine and good diet ordered.

10th. — Nineteenth day. Abscess in ham opened. Discharged several ounces of thin, greenish pus,

tinged with blood. Patient unable to extend right arm. Continues to sweat.

13th. — Probe reveals a small necrosis of skull.

21st. — Right elbow much swollen; pain in left shoulder; pain in epigastrium

29th. — Fluctuation over right tibia; pus evacuated; night sweats copious.

Dec. 1st. — Induration of arm less.

5th. — Swelling of elbow subsiding. Ordered large doses of quinine for a brief period. Appetite good. Is sitting up.

12th. — Necrosis exposed by incisions.

Jan. 10th. — He was discharged well, except a slight necrosis. Now ten weeks since the receipt of the injury.

There can be little doubt that purulent absorption took place from the veins of the diplöe beneath the linear fracture. Rigor began in three days, and the tumor in the ham in nine days. The question of interfering with the trephine was seriously entertained at first, but the symptoms did not seem to warrant it.

In the first case of pyæmia, the depots were formed in the vital organs, and death followed. In this case the pus determined to the surface, and he recovered.

In another case of fissure of the skull, recovery took place promptly, and without symptoms.

Three fractures of the frontal bone were depressed into the frontal sinus, but did not penetrate farther. The injury was inflicted with a flat-iron in two instances, and with a brick in the third one. The

frontal sinus in one case was extremely deep, and the anterior lobes of the cerebrum set back, like the Simian race. This saved the patient, who was unusually stupid, from injury of the brain. In every case the sinus granulated and the patient recovered without bad symptoms.

Three cases were complicated with *hernia cerebri*, of whom two died, and one recovered.

Compound, depressed fracture; hemiplegia and death. — A lad of eight years was struck on the head with a small hammer, producing a compound depressed fracture of the right vertex, one inch and a half in diameter. Cerebral substance exudes. Perfectly conscious. Portions of jagged and depressed bone were elevated and removed. The dura mater was found lacerated. Hernia cerebri followed. Pulse 160; conscious; cheeks flushed; both pupils much dilated, and both eyes obstinately directed to the right side. They could not be diverted. The left arm and leg were paralyzed, but reflex movement could be excited. Urine voluntary. He survived five days.

In the second case, hernia cerebri followed the use of the trephine; complete hemiplegia of the opposite side succeeded, and eventually, coma and death.

The third case recovered. A strong, healthy man, aged 29, was struck from behind with an axe, held

in both hands, and with great force. He was unconscious for two hours; then had severe pain and restlessness; no paralysis; pupils alike and normal; pulse 60, full, intermitting every fourth beat. A depressed portion of the occiput, two inches square, communicating with a large lacerated wound of the scalp, was raised and removed. Dura mater scratched, but not perforated. The pulse became regular. Next day he was delirious. On the following day, intermittent pulse, with fever. Four days after injury, pulse down to 54. No paralysis. Wound of integuments opened. Suppuration has begun. Wound black and sloughy. Dura mater bulging.

Dr. Homans, fearing compression from blood or pus, laid open the dura mater. The membrane was congested, but nothing else found. Hernia cerebri slowly extruded, until it attained the size of an English walnut. For the following week he was violent and delirious. The hernia pulsated strongly. At the end of a week he became quiet and rational. Hernia covered with granulations. Pulse 76, regular. The following week it alternated from 48 to 60. A little incoherent at times. Wound healthy. The following fortnight, pulse from 50 to 60. Dizziness only on turning in bed. Wound contracting. At the end of another fortnight he was walking about, with a pulse of 70, and regular. Improving in appetite, strength and flesh. Ten weeks after the receipt of the injury he was well, and discharged. The hernia

cerebri had subsided, and was covered with sound integument. The only symptom complained of was dizziness on moving the head suddenly, and a feeling as if the brain were shaken on the injured side, at those times.

The fatal fractures of the upper jaw were compound, and excessively severe. They severed the jaw and face completely from its upper attachments, so that both hung down and wagged from side to side, with every movement of the mouth.

Extensive sloughing, exhaustion, and death ensued.

In not a single case of fracture of the base of the skull was there any discharge of clear serum from the ears; blood, however, came from the auditory meatus, in several instances.

One case of concussion terminated in entire and permanent deafness. The patient was a young man who was struck by a rail-road bridge, while serving on a freight train. He soon recovered in every respect, except that he became stone deaf! No wave of sound ever impressed his auditory nerves. After staying a long while in the hospital, he left, not relieved.

A boy whose head was caught between two doors, had extravasation of blood into the orbit, great œdema of the face, and stupor, lasting many days. No fracture could be determined, though one of the base, involving the orbital processes, was suspected. He recovered.

One child, with compound depressed fracture of the parietal bone, hernia cerebri and hemiplegia, lasting six weeks, recovered in 122 days.

No.	Name.	Age	Occupation.	Injury.	Symptoms.	Complications. Primary.
1	Mary G. 1. 165.	35	Domestic.	Depressed fracture of parietal and temporal bone.	Compression. Hemiplegia.	
2	Sarah A. L. 1. 135.	34	Domestic.	Compound fracture of outer table of frontal bone, opening sinus.	None.	Severe laceration of forehead. Alcoholism.
3	Thomas J. F. 3. 219.	55	Sailor.	Contusion of head from fall of 20 feet.	Concussion lasting 14 hours.	Fracture of rib.
4	Frank E. W. 2. 145.	8		Comp. depressed fracture of parietal bone from blow of hammer.	None.	Dura mater torn.
5	David P. 2. 239.		Soldier.	Depressed fract. of parietal bone.	Concussion primarily; compression secondary.	
6	John O'N. 1. 247.	21	Laborer.	Fall through "three stories."	Concussion.	Fracture of forearm.
7	Catherine N. 5. 50.	50	Domestic.	Fall.	Concussion.	Facial paralysis.
8	Susan S. 7. 3.	37		Lacerated wound of scalp. Contusions. Bone denuded.	Concussion.	Severe shock.
9	Richard G. 7. 76.	55	Watchman.	Depressed comp. fracture of parietal bone, from fall.	Concussion.	
10	Thomas T. 7. 117.	37	Sailor.	Comp. depressed fracture of parietal bone from blow by falling iron; comp. opening a punctured wound. Depression of outer table one fourth inch.	None, the patient deeming his injury a trivial one.	
11	Patrick M. 7. 206.	40	Laborer.	Comp. depressed fracture of parietal bone (2 by 1 in.) with severe laceration of scalp.	Slow pulse, contracted pupils. Consciousness retained.	
12	Manuel R. 9. 44.	30	Seaman.	Comp. depressed fracture of frontal bone. Depression one eighth of an inch.	None primarily. Secondarily dizziness and tightness of head, developing on third day.	
13	Luke R. 9. 228.	25	Driver.	Comp. depressed fracture of frontal bone into frontal sinus.	Moderate concussion.	

Complications. Secondary.	Treatment.	Result.	Surgeon.	Remarks.
	Scalp dissected from overfract. Trephine in temporal bone; remove loose fragments and coagulum beneath. Wet dressing.	Death 46 hours.	Dr. Cheever.	Fract. found, *post mortem* to extend to base of cranium.
	Free exposure of the injured part. Wound left open. Wet dressings. Saline cathartic.	Recovery perfect 31 days.	Dr. Thaxter.	
Pneumonia.	Saline cathartic. Head shaved.	Recovery 8 d'ys part'l; patient left hospital.	Dr. Cheever.	
Hernia cerebri in slight degree. Hemiplegia.	External wound freely enlarged, and loose fragments removed. Cold water dressing.	Death five days.	Dr. Coolidge.	Patient conscious from the first.
	Leeches and cold to head.	Death 54 hours.	Dr. Coolidge.	
	Cold to head.	Recov. from cerebral injury 4 days.	Dr. Buckingham.	
	Cold to head.	Recovery 21 days.	Dr. Thaxter.	
	Wound left freely open. Cold water dressing.	Recovery 16 days.	Dr. Cheever.	
	Wound enlarged, and trephining of parietal bone; fragments removed and depressed bone raised.	Death before the operation terminated.	Dr. Cheever.	No external signs of fracture and depression.
	Wound enlarged and parietal bone trephined. Loose fragments removed, and pressure on dura mater relieved. Absolute rest in dark room.	Recovery 39 days.	Dr. Cheever.	The wound healed well without any complications. There were no cerebral symptoms from the beginning. The portion of cranium depressed was ¾ of an inch square.
Compression. Convulsions.	Scalp dissected from fracture. Projecting fragment of bone sawed, and depressed bone raised with elevator.	Death 8 days.	Dr. Thaxter.	Fissures of cranium, quite extensive.
Necrosis.	Rest and depletive measures first 72 hours. Trephined, and raised depressed bone at that time.	Perfect recovery 84 days.	Dr. Thaxter.	The operation was delayed until the secondary cerebral symptoms began to develop. There were no serious symptoms after through out the case.
Necrosis.	Loose fragments removed. Simple dressing.	Recovery 41 days.	Dr. Cheever.	The frontal sinus was unusually deep, and the fracture was confined to the outer table.

(*Continued.*)

No.	Names.	Age	Occupation.	Injury.	Symptoms.	Complications. Primary.
14	Samuel B. 10. 148.	40	Mechanic.	Fract. through base of cranium from *centrecoup*.	Complete compression; hemorrhage from nose and ears, unequal dilatation of pupils.	Great collapse.
15	Patrick T. 10. 271.	28	Laborer.	Comp. depressed fracture of frontal bone from a blow, confined to outer table, 1-16 inch.	None.	
16	Patrick B. 12. 35.	29	Laborer.	Comp. depressed fract. of occipital bone, ¼ in. with extensive scalp wound from blow of an axe.	Moderate concussion, succeeded by temporary violent mania.	
17	Daniel C. 12. 68.	9		Comp. fract. of parietal bone, from blow, opening longitudinal sinus.	Complete compression, convulsions.	
18	Patrick K. 12. 159.	38	Laborer.	Comp. com. depressed fract. of parietal bone, lacerating brain substance.	Complete compression, pupils normal and dilatable. Involuntary micturition.	Collapse.
19	Patrick C. 12. 221.	26	Gilder.	Comp. fract of frontal bone into frontal sinus from blow of flatiron.	Primary concussion.	
20	Julia S. 11. 18.	24	Domestic.	Comp. depressed fract. of frontal bone from R. R. injury.	None after the primr. concussion of two hours.	Collapse.
21	Patrick W. 11. 146.	35	Laborer.	Compt. fract. into frontal sinus from blow of brick.	None.	
22	John F. 14. 5.	22	Laborer.	Pt. injured by fall, without any primary lesion of head except a slight scalp wound.	Strabismus after 10 days, with numbness; hemiplegia.	

(Continued.)

Complications. Secondary.	Treatment.	Result.	Surgeon.	Remarks.
		Death in 3 hours.		
Abscesses in scalp, and in other parts; necrosis.	Wound left freely open, cold to head, Brom. Potass.	Recovery 81 days.	Dr. Cheever	
Hernia cerebri Delirum.	Wound enlarged; periosteum dissected back; trephine applied; frag. removed over space 1½ in. diameter.	Recovery 73 days.	Dr. Homans	
	Wound opened freely, and plugged to control hemorrhage.	Death 5 h'rs	Dr Coolidge	
		Death 48 Hours.	Dr. Coolidge	
Atrophy of optic disk.	Simple dressing to the wound.	Recovery 22 days.	Dr. Coolidge	
Epileptiform Convulsions. Delirium.	Trephine in frontal bone, depressed bone raised.	Death 9 days.	Dr. Cheever	Fract. found *post mortem* to involve orbita, plate and wing of sphenoid limited meningitis, and inflammatory softening of brain.
Erysipelas.	Wound left freely open.	Recovery 71 days.	Dr. Cheever	Sinus unusually large.
Paralysis of extensor muscles and of face and finally complete hemiplegia and coma.	Trephined 12 days after injury at seat of scalp wound.	Death 32 days.	Dr. Buckingham.	Trephining gave no relief to symptoms, and discovered nothing but serum under dura mater. No autopsy.

(*Continued.*)

No.	Name.	Age.	Occup'tn.	Injury.	Symptoms.	
					Primary.	Secondary.
23	Timothy S. 14. 115.	10		Comp. depres'd fract. of parietal bone. Dura mater wounded.	Tendency to coma.	Delirium. Convulsions.
24	Harry D. 14. 140.	25	Brakeman.	Head struck by low bridge, over occipital bone. No fracture discovered.	Concussion. Collapse.	Complete deafness.
25	William H. P. 14. 151.			Fracture at base of skull.	Compression. Hemorrhage from nose and ears.	
26	Reuben A. 14. 185.	56	Teamster.	Fracture of frontal bone through orbital plate.	Compression. Unequal action of pupils.	Involuntary dejections.
27	Patrick C. 15. 170.	65	Laborer.	Fracture at base of skull. Railroad injury.	Compression.	
28	Colin McL. 15. 226.	35	Laborer.	Compound fracture of parietal bone with depression.	Compression.	Involuntary dejections.
29	Michael C. 16. 246.	12		Head caught by a shutting door, and contused badly. Deemed at the outset a trivial injury. Patient entered Hospital five weeks after accident.	Concussion.	Anæmia. Gradual depression. Ecchymosis around both eyes appearing two weeks after injury. Firm painless tumor at right temple, and over left ear. Mental condition inactive. Cardiac murmur and int. pulse.
30	John C. 16. 248.	17		Compound fracture of os frontis, with extensive scalp wound.	Partial concussion.	
31	Aaron R. 17. 1.	45	Peddler.	Concussion with lacerated scalp wound.		Delirium.
32	Andrew C. J. 17. 12.	21	Brakeman.	Compound com. depressed fracture of os frontis. Railroad accident.	Compression.	
33	Ebenezer C. 17. 23.	61	Stone Cutter.	Comp. com. fracture of bones of face from blow on edge of stone step, severing the upper maxilla from all its attachments.		

(Continued.)

Complications.		Treatment.	Result.	Surgeon.	Remarks.
Prim'y.	Second'y				
		Depressed bone raised with elevator without trephining.	Death, five days.	Dr Buckingham.	
		Blisters and local depletion. Brom. potass.	Discharged with deafness, but other symptoms relieved, after sixty-six days.	Dr. Homans.	
			Death twenty minutes.		Condition contra-indicated interference.
Collapse.		Stimulants.	Death nine days.	Dr. Homans.	
Collapse.		Stimulants.	Death eight hours.	Dr. Thorndike.	
Collapse.		Stimulants. Loose fragments remove.	Death four days.	Dr. Thorndike.	
	Marked emaciation, and general depression.	Tonic and expectant treatment. Trephine after 16 days. 7 weeks after accident. Free discharge of serum from under dura mater. No fracture discovered.	Patient passed into a condition of collapse and died in twenty-four hours.	Dr. Thorndike.	No autopsy.
Fracture femin. and ilium.		Stimulants.	Death twelve hours.	Dr. Thorndike	
		Brom. Potass.	Death three days.	Dr. Derby.	Post mortem examination discovered extensive effusion of blood opposite seat of injury, beneath membranes.
Shock.			Death three hours.		
Fracture of lower jaw.	Pleurisy. Pyæmia. Extensive sloughing.	Bones approximated by wire sutures.	Death three days.	Dr. Derby.	

(*Continued.*)

No.	Name.	Age	Occupation.	Injury.	Symptoms.	Complications. Primary.
34	William H. 17. 88.	12		Concussion. No fracture determin'd.	Compression supervened on 2d day.	
35	Joseph E. M. 17. 92.	4		Comp. depressed fracture of parietal bones in median line of vertex; depression ⅜ inch, and two inches in diameter.	Patient slightly drowsy, but not comatose: on 2d day, convulsions occurred, followed by hemiplegia which lasted 6 weeks, and subsided spontaneously.	Slight hemorrhage from meningeal artery.
36	Hugh S. 18. 136.	41	Boilerworker.	Comp. depressed fract. of os frontis, by a punctured wound from piece of iron. Depression ¾ inch, and ½ inch in diameter. Slight escape of cerebral substance.	None from beginning to end.	
37	Frank S. 18. 170.	24	Soldier.	Comp. depressed fracture of parietal bone. Depression ¼ inch.	Compression. Shock.	Fract. of lower jaw and of nasal bones.
38	John I. 18. 192.	25	Seaman.	Fracture at base of skull.	Compression.	
39	Patrick S. 19. 250.			Fract. of temporal and parietal bones, extending from sagittal suture to mastoid process.	Convulsions. Hemiplegia at the outset. Compression. Intelligence much impaired.	
40	Charles C. 20. 136.		Teamster.	Fracture at base of skull.	Compression; with hemorrhage from nose and ear.	Fract. clavicle.
41	John G. 20. 188.	40	Painter.	Fracture at base of skull.	Compression.	Comp. fract. of tibia and fibula.
42	Michael K. 20. 228.	30	Laborer.	Fract. of os frontis, with "slight" depression, extending over vertex and along lambdoid suture to base of skull.	Concussion, developing into compression after six days.	
43	James C. 20. 258.	55	Carpenter.	Fracture at base of skull.	Compression.	Fract. of radius.

(*Continued.*)

Complications. Secondary.	Treatment.	Result.	Surgeon.	Remarks.
	Depletive.	Death 70 hours.	Dr. Derby.	No autopsy.
Hernia cerebri to size of pigeon's egg. Necrosis.	Trephined and depress'd fragments removed, leaving a surface exposed 2 inch by 1 inch; the brain pulsating beneath plainly. Subsequent treatment supporting.	Recovery 122 days.	Dr. Derby.	
	Loose pieces removed without trephining. Rest in dark room with regulated diet.	Recovery 59 days.	Dr. Thorndike.	
	Depressed and comminuted fragments removed without trephining.	Death six hours.	Dr. Cheever.	
		Death forty hours.	Dr. Ropes.	
Necrosis.	Incisions on 7th day, setting free pus and serum, without exposing fracture. Necrosis having developed, and the discharge of pus still abundant, free incisions were made exposing the whole injured region five weeks after injury.	Manifest improvement after second operation. Patient taken away by friends nine weeks after injury, the hemiplegic symptoms having somewhat subsided, and intelligence improved. The free incisions had healed well.	Drs. Thaxter and Cheever.	
		Death two hours.		
		Death 1¼ hours.		
	Trephining after six days.	Death 28 hours after operation; 7 days after injury.	Dr. Homans.	
		Death 24 hours.		

Other Fractures. — There were six undoubted fractures of the *body of the scapula;* none of the *neck* of the scapula, that could be verified.

The fracture of the body of the scapula is extremely rare. Hamilton has seen only two cases. Four cases occurred in 2,358 fractures at the Hotel-Dieu, and eight among 1,901 fractures in the Middlesex Hospital.

It must be the result of direct violence, and it was so in all our cases. Heavy derricks or timber fell, striking the shoulder from behind. The infra-spinous portion was usually broken; sometimes the spine. This corresponds with the statements of authors.

In fracture below the spine, the anterior fragment is pulled towards the axilla by the teres muscles and scapular head of the triceps, while the posterior fragment is drawn upwards and backwards by the rhomboid muscles.

It is difficult to keep the fragments from tilting. Nelaton and Malgaigne confess that they have never kept them perfectly in place. Our cases were treated by adhesive strips over the injury, and bandaging the arm and hand to the body. *Five* resulted in good prospective use of the arm, and *one* died.

To cite briefly one case: The fracture ran obliquely across the infra-spinous fossa, beginning at the axillary border of the bone, just below the glenoid cavity, and passing downwards and backwards to the posterior border and lower angle. There were mobility and crepitus, and a little displacement. Great inability to move the shoulder and arm. Treatment

was by broad adhesive straps fixing the scapula, and fastening the arm to the side, the patient being kept on his back. In ten days an effusion of callus could be felt, forming an oblique ridge across the infra-spinous fossa, as evident as the spine itself. In three weeks union was good.

In the treatment of fractures of the arm, fore-arm and hand, *one hundred and sixty-eight* in number, splints were more frequently improvised for the occasion, than reliance placed upon those ready made. To this statement the exception should be made of the use of shoulder-cap splints, for the fractures around the shoulder-joint, and of the internal angular splint for the elbow. Of the former, the sized felt, cap-splints of Ahl were employed; and for the latter, the adjustable angular splints of Goodwin.

Experience and common sense seem to us to fully endorse the statement of Hamilton, that ready-made splints, carved with fenestræ, and ridges and hollows all prepared for uniform processes of bones, more often misfit than fit the broken arm; and that they are the rude appliances of the mechanic rather than the surgeon. So many circumstances of individual peculiarities, of the nature of the injury, or the amount of contusion and swelling, are to be taken into account in every case of fracture, that we can no more expect ready-made splints to fit every broken limb, than we can expect ready-made shoes to fit every foot. And we believe more harm to have resulted from the rigid application of harsh apparatus, than from leaving fractures more to time, rest and soothing applications.

The material we have found most useful is bass-wood, or white-wood, sawed into convenient lengths and widths, and planed to a thickness of from three-sixteenths to one-fourth of an inch.

Sheet tin, or tinned iron, as heavy as can be bought, was also largely used for splints, and proved most serviceable in compound fractures and excisions. Applied to the bare skin, without padding of any kind, it was the least irritating, the coolest and the cleanest splint employed. It has the advantage, also, of being easily moulded or cut into any shape desired.

In the fractures of children, heavy binders' board was used. And in fractures around the elbow-joint, in young persons, angular splints were moulded from gutta-percha. The only objection to its hospital use is its cost.

The splints called Crimean were very comfortable for splints of cöaptation, to be applied to restrain muscular action in fracture of the thigh, for instance. Made of separate narrow wooden splints, quilted into cotton cloth, they fit well, and can be easily washed.

It has been very much the practice in this hospital to treat fractures of the upper extremity with very little bandaging, but to leave them exposed as far as possible. The splints were held in place by three or four strips of plaster, and no roller applied. Thus the amount of swelling, the lines of the limb, etc., could be always seen, and any defects remedied early. For this use, also, the strap and buckle, made of woollen, or elastic webbing, two inches broad, has

been extremely popular. It holds on more uniformly than plaster or bandage, and can be quickly loosened or tightened.

Of course it is essential, in patients treated outside the Hospital, that due caution should be insisted on lest they loosen their apparatus too frequently themselves; and in out-patients it is more prudent to sometimes put on the roller, and even to fasten it with starch, or glue.

Collis's fracture of the radius, of which there were *one hundred and twenty-four* cases, was treated rarely by Nélaton's pistol-splint, frequently by the straight splint, and many also, by Bond's splint. The pistol-splint has been the least satisfactory with us. The straight double splint has given many good results. Bond's splint seems to be the most comfortable, and to be reliable, if the patient can be seen often. This splint was always made extempore, for the case in hand. The shape of the fore-arm and hand, the latter abducted, is marked out on a strip of bass-wood, and then cut accordingly — sides about half an inch high, of tin, are tacked on. A piece of turned wood, or a cotton roller, is fastened at the distal end, for the metacarpus to rest over. The splint is then padded to suit the case. The fractured limb is laid in it, and confined by straps or bandage. The thumb and fingers are left free, and the fore-arm placed in a sling. When well applied, this was an extremely comfortable apparatus.

It is, of course, well understood, that the result in this fracture depends very considerably on the nature

and amount of injury. Some cases turn out well, and some badly, in any apparatus. The fracture may be impacted, and permanently deformed; the amount of subsequent effusion among the flexor tendons may be large and permanent; or rheumatism may set in, in elderly patients, all of which influences may give a bad result.

Passive motion should be gently used, pretty early in the case, according to our experience.

Before leaving the upper extremity, it is proper to mention that one fracture was thought to be the very rare one of the *coronoid process of the ulna.* The patient, a boy of nine years, came in with a dislocation of both bones of the fore-arm backwards. The joint fell out of place as often as it was put in. No fracture of the lower end of the humerus, condyles, or olecranon could be made out. And as a proof that something more than ordinary dislocation backwards had occurred, the arm, placed on an angular splint, became anchylosed (false anchylosis); did not regain its power of motion when it was moved (and it was moved early), and required the usual treatment of several weeks of passive motion to restore its functions. We mention this case with diffidence, well knowing that the existence of this fracture is disputed; and having suspected it in another case, where early mobility of the joint proved that we were mistaken.

There was one case of *fracture of the sternum.* The patient, while fresco painting a church ceiling,

fell to the floor, a distance of forty feet, striking on the backs of the pews, and being also bruised by having the planks of the staging fall on him. He sustained a fracture of the 5th and 6th ribs, at their middle. He also had a fracture of the sternum, displacing the manubrium from the body of the bone. The upper end of the lower fragment projected upwards. He had great pain in deglutition as well as in inspiration. There was a good deal of constitutional shock the first twelve hours. He rallied under the use of stimulants and opiates. A broad, tight bandage was applied around the chest, which gave much relief.

In three days he was able to sit up. In one week he was discharged, at his own request, relieved. There was neither pleurisy nor pericarditis.

There were eleven *fractures of the pelvis*. Of these, five were fractures of the crest of the ilium, or of the anterior superior spine. In three cases the patients fell from a height, striking on the side of the pelvis. In two, they were caught between cars, or timbers. All of these cases recovered perfectly in from two to four weeks. In none was there any injury of the viscera. Treatment consisted of rest in bed, and sometimes a broad bandage, but not always.

One patient was thrown backwards from a horse, and sustained a fracture, or partial dislocation of the sacro-iliac synchondrosis. There was deformity, and inability to stand. No paralysis. He was treated with the pelvic bandage. He recovered so as to move

about in three weeks, but with a little shortening of the leg of the injured side.

One case, fully narrated in the Boston Medical and Surgical Journal for May 3, 1866, was a fracture through the os innominatum, caused by falling four stories. The fracture started from the crest of the ilium and ran downwards, and was met, at the acetabulum, by a fracture of the ramus of the ischium and pubes, running upwards. The whole fractured piece of the os innominatum was movable on the rest of the pelvis. There was no complication with the viscera. Recovery took place in five months, with shortening of the affected limb, and sciatica.

The remaining two cases were both complicated with rupture of the urethra, or bladder, and terminated fatally. They are worthy of brief recital.

A boy of 11 years got caught between the bunters of two railroad cars, and his pelvis crushed. He was not brought to the hospital until twenty-four hours afterwards. He was quite conscious, and seemed to be suffering mainly from retention of urine. There were contusions on each hip. The lower part of the abdomen was tense and dull on percussion. No urine passed since accident. Pulse 140. Ineffectual attempts were made to pass a catheter. Under ether, the catheter could be passed as far as the prostatic portion, where a false cavity seemed to exist. With the finger in the rectum, the catheter could be felt with such a thin septum intervening, and moved about so freely, that great laceration of the urethra

was evident. No prostate could be felt. A fracture of the pubes was made out, to the left of the symphysis. A dissection was made down into the perinæum, by Dr. Cheever, until urine flowed freely. The bladder being thus collapsed, and the membranous and prostatic parts so torn, no catheter could be got into the bladder. He was left to drain through the perineum.

The following day it was found that urine had ceased to flow by the perineum, and the bladder was again distended. Constant vomiting and great prostration. The bladder was now opened over the pubes, with a curved trocar. Urine flowed freely, and an elastic catheter was introduced to act as a syphon. The patient sank and died the same afternoon.

The autopsy revealed a separation of the symphysis pubis; a fracture a little to the left of the symphysis; and two symmetrical fractures of the rami of the ischium, just in front of the tuberosities. The bladder was empty. The neck of the bladder and prostate entirely torn across.

A strong man had the pelvis caught between a schooner and a tug-boat. The pulse was rapid, quick and feeble; the skin cool and moist; aspect collapsed. Severe pain across the pelvis, increased by any motion of the body, or of either leg. Some relief was given by strapping the knees together. Brandy and morphia were given.

He was etherized, and a separation of the symphysis pubis, with mobility and fracture of the left

os innominatum was clearly made out. A catheter could be passed down to the membranous urethra without difficulty; then it seemed to push into a free cavity, but no urine could be obtained. Warm water was injected, and returned bloody. The patient was in such a collapse, that further attempts were desisted from. Complains of intense, burning pain in abdomen, which is tense and tympanitic. Respiration entirely costal. He gradually became pulseless; the body cold, but the abdomen hot, and died seven hours after the injury. No autopsy could be obtained. Whether death was due to rupture of the bladder and extravasation into the peritoneum and shock, only, or whether there was rupture of any other viscus, or a blood-vessel, also, we cannot now decide. We may fairly consider the question, whether in another so desperate case it would not be proper to cut over the pubes and search for the bladder there, if we failed to give relief through the perineum.*

One hundred and thirty-one *fractures of the femur* are enough to furnish some basis for a comparison of results.

To speak first of simple and uncomplicated fractures, they occurred at all ages and in all parts of the femur. Treatment, with very few exceptions, soon settled down into the following uniform course. The apparatus to be described is a modified combination of the methods of Buck and Liston.

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* See case by Dr. Wm. J. Walker, in his treatise on compound and complicated fractures; also several reported in Eve's Surgical Cases.

First. — *Extension* was made by strips of adhesive plaster carried above the knee, up to the seat of fracture, and down below the foot, on each side. They were retained by spiral turns of plaster and by bandaging. The lower ends were attached to a cord, passing over a pulley, and suspending a weight of from five to fifteen pounds, according to the age of the patient, or his muscular power.

Second. — *Counter-extension* was made solely by raising the foot of the bed four inches.

Third. — *Rotation* was *prevented* by a long, outside splint, extending from above the pelvis, below the foot. This was lightly bandaged on from the ankle to the groin, and ended in a few turns of the single spica, around the trunk. Sand bags were sometimes added.

Fourth. — *Splints of coäptation* were applied around the muscles of the thigh, next the skin, and secured by broad straps and buckles. The advantages of this method are steady, persistent extension, and freedom of the perineum from any counter-extension; comfort and ease to the patient; no sloughs, and good average results.

Shortening rarely exceeded three-fourths of an inch; often it was much less. No adult escaped without some shortening; many of the children had, however, no perceptible difference between the two legs. In none of the simple fractures were there any sores, or sloughs from the apparatus.

Non-union, originating in the hospital, occurred only *once* in five hundred fractures. The double-inclined plane was used for some fractures near the hip. The double-inclined plane, combined with extension by weight in the axis of the femur, the pulley being at a height of five or six feet from the floor, according to the plan of Prof. Nathan Smith, was used in one case. The anterior splint of Dr. Nathan R. Smith was used in a few instances.

It was not perceived that either of these modes, in simple fractures of the femur, was more beneficial than that first described.

XI. THE SPINE.

FIVE CASES OF DISLOCATION AND FRACTURE OF THE SPINE. TREPHINING THE SPINE IN TWO CASES.

Case 1. — *Dislocation of the Fifth and Sixth Cervical Vertebræ.* — June 15, 1866. Michael B., æt. 21. At 7½ o'clock last evening, patient was swinging upon a chain across the back of a wagon, when he lost his balance, fell backwards, and struck upon his head and neck. He did not lose his consciousness, but was unable to move his body or extremities. Some officious friends applied a blister to his neck. He entered the hospital at 10½ A. M. Pulse 60 and full. Respiration quiet, but wholly abdominal. Di-

aphragm contracting well. Head thrown back. Slight priapism. Paralysis of sensation and motion of entire person below the nipples anteriorly, and below the seventh cervical vertebra posteriorly. Slight sensibility just above the elbows increasing as you ascend. No reflex action. Body warm. Retention of urine and fæces; patient could rotate his head through an arc equal to one fourth of a circle, and could move it somewhat forwards and backwards, though nodding occasioned pain. He could also bend his neck laterally, but slightly.

The seventh cervical vertebra, and all below it, appeared to be uninjured. The fifth and sixth cervical, over which there was an effusion and swelling, seemed abnormally elastic on pressure. The vertebræ above could not be felt. No crepitus.

Patient was carefully put to bed, and his urine drawn. At half past one P. M., his pulse was 48; at three, 44; at night, 56 to 64, and irregular. Speaks of tingling below elbows.

16th. — Pulse 64; respiration distressing and more frequent, averaging 36. No thoracic respiration; chest as still as a marble statue. Diaphragm working less forcibly. Amount of air inspired is small. Action of heart labored. Tympanites of abdomen. No facial paralysis. Mind perfectly conscious. Swallows and talks well. Entire paralysis of arms, legs, trunk, bladder, &c.

5 P. M. — Pulse more irregular, and feebler; respiration 32; expiration noisy. Eats gruel. Moves his head from side to side. Talks incoherently.

Speaks slowly, with great effort to articulate; words lagging.

8 P. M. — Respirations 28; pulse 50; both irregular and interrupted. Speaks with extreme effort.

9½ P. M. — Respiration gradually became slower and more shallow, until he died — fifty hours after the accident. No autopsy allowed.*

Case 2. — *Probable Dislocation, and perhaps Fracture, of the Cervical Vertebræ.* — Sept. 20, 1866. Mr. N. B., a caulker, of middle age, while overseeing his men early in the morning, some frost having formed during the night, slipped while crossing from a ship to the wharf, and fell down between them. It being low water at the time, the distance fallen must have been considerable. He fell into the water and dock-mud, striking, as he fell, on the back of his neck, on a fender at the side of the vessel. His groans attracting attention after a short time, he was taken up, quite conscious, but paralyzed entirely below the neck. He was now conveyed in a carriage several miles to his home, and I saw him about 12 o'clock.

He was sitting propped up in a chair, with his legs raised upon a second chair, to prevent his sliding down upon the floor. His thorax was flexed upon the pelvis; his neck was bent forwards, and his arms hung helpless by his sides. He was quite conscious; protruded his tongue straight and easily; his pupils were normal; his pulse feeble and rather slow. He said he had no feeling below his neck.

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* Note. — The numbering does not correspond with the cases in the table A case from private practice is interpolated here.

His wet clothes were cut off, and he was carefully put to bed — his head propped on a pillow in the position he desired. Warmth was applied to the feet and to the surface of the body; stimulants were given; his urine drawn off. He was rolled on to his side, and the back examined. Tenderness and effusion were found over the posterior cervical region. It seemed as if the vertebræ just above the seventh cervical were depressed forwards. No mobility nor crepitus could be felt. Paralysis, both of sensation and motion, was total below the neck. The respiration abdominal. There was partial priapism. He was evidently in a state of shock.

6 P. M. — Strong reaction had come on. His pulse was full and slow; the body warm and moist; the mind perfectly clear and active. Paralysis was entire. A small amount of urine was drawn off. The walls of the thorax were perfectly motionless. The diaphragm was working forcibly. No symptoms of cerebral lesion.

Sept. 21st. — At 5 A. M., I was called to him in haste, and found him sinking. His respiration was slow and imperfect; his skin livid; the pulse feebler and slower; the mind affected by venous blood; mucus had collected in the bronchi and could not be expectorated. His pulse and respiration grew slower and fainter until he died, about twenty-four hours after the receipt of the injury. No autopsy.

According to Mr. Alexander Shaw,* "It is a melancholy fact that, in general, when the spinal cord is

* Holmes's Surgery, vol. ii. p. 212.

destroyed in the upper dorsal and the cervical regions, the main question is, merely, how many days is the patient likely to survive the fatal injury? In such cases, the principal cause of mortality is the greater or less interruption to the operation of breathing.

"The whole series of intercostal muscles, as well as the abdominal parietes, will be paralyzed. To explain how the process of respiration can be carried on in that defective condition, it has been thought sufficient to affirm, without discussion, that it is effected by the diaphragm exclusively. It is said that the phrenic nerve, which controls that muscle, emerging from the spinal canal above the fourth cervical vertebra, while it remains uninjured, will cause the diaphragm to contract; and when it relaxes, the weight and elasticity of the abdominal parietes will cause it to recede into the thorax, and expiration will take place.

"But between the fourth and fifth cervical vertebræ, emerges the external or long thoracic nerve, the external respiratory nerve of Bell, which supplies the serratus magnus muscle. That muscle has a strong inspiratory power, when the shoulders are fixed. And as a certain tendency exists in the diaphragm, owing to its attachments to the ribs, when it contracts powerfully, to depress and draw together the lower margins of the thorax, the counteracting power of the serratus must exercise an important influence in making inspiration perfect.

"It may, therefore, be concluded, that in fractures of the vertebræ of the neck, if the spinal cord retains

its function as low as the sixth, the diaphragm will have the coöperation of the serratus magnus muscle. And that assistance will be valuable for expiration as well as inspiration; for in proportion as the thorax is more elevated, it will descend with greater force by its elasticity, in expiration, and so expel the air from the lungs more effectually.

"Very frail, however, is the tenure by which a patient, who has suffered fracture of the cervical vertebræ, holds life. The causes which cut him off early are twofold: —

"1st. Owing to paralysis of the abdominal muscles, tympanites of the abdomen comes on and pushes up the diaphragm.

"2d. The mucus naturally secreted in the air-passages accumulates, owing to the inability of the patient to expel it by coughing. The blood becomes imperfectly oxygenized, and death is ushered in by coma."

Case 3. — *Fracture of the Laminæ and Spines of the second and third Dorsal Vertebræ, and of the Spines of the fourth and fifth; total Paralysis below the Nipples; Trephining of Spine, with Restoration of Motion and Sensation; subsequent Emphysema of Chest, and Death, apparently, from Pneumothorax.* Jan. 14th, 1867. A. B., æt. about 40, while at work just after the noon rest, fell from a considerable height, and struck upon his back and occiput. He was taken up conscious, but paralyzed in the legs

and trunk. He became gradually more unconscious and feebler.

When I saw him, at half-past two, P.M., his pulse was quite feeble, and his respiration very small and entirely with the diaphragm. He could be easily roused to consciousness. There was no stertor. His pupils were contracted. There was partial priapism, and retention of urine. The legs and trunk entirely helpless. The extremities warm. Bruising, and crepitation of broken bone were very evident between the scapulæ. He objected to having his head moved at all. He appeared to be suffering from shock, partial concussion of the brain, and pressure on the upper dorsal portion of the spinal cord. His pulse and respiration were failing, and it was evident that he must soon sink, unless relieved. He refused to swallow, but was stimulated by alchoholic enemata.

Having in my mind the miserable end of the cases just related, I had determined to trephine the spine, should another similar accident present itself. This patient had a perfectly evident fracture of the vertebral column in the upper dorsal region, — a region more favorable for operation than the neck. If anything were to be done, it must be done immediately.

The patient was turned partly over on his face, and an incision made over the fracture. The finger now entered a bruised and softened space, in which could be felt the broken ends of several spinous processes. On dissecting down upon and removing these, the laminæ was found to be broken. Segments of the arches of four vertebræ were removed with the

trephine, elevator and tooth-forceps. The cord was now freely exposed, and seemed intact in its membranes, except a small spot at the upper border of the wound, where an appearance, which might be a laceration, presented itself. There was free venous hemorrhage, but it ceased spontaneously. The rough edges of the laminæ were trimmed off with the gnawing forceps. The cord appeared to be free from pressure, both above and below the wound. No injury of the head was found. But emphysema began to appear on the right side and front of the thorax. The condition of the patient did not undergo much apparent change. The wound was left open. He was placed in a semi-supine position in bed, and stimulated, alternate hours, with alcoholic and beef-juice enemata.

15th, 9 A. M. — Entirely conscious; protrudes tongue; swallows; talks. Pulse 108, considerably fuller. *Respiration* 30, *and thoracic;* every intercostal muscle seen to be contracting well in inspiration. Some dyspnœa. Emphysema moderate, under pectoralis major of the right side. Chest tympanitic. Respiration obscure. Priapism gone. Can feel slight touch with finger as low down as knee, but not lower. No hemorrhage from spinal wound. Has been able to hold interviews with his wife and family.

From this time he began to fail. The pulse ran up to 160. The respiration became very rapid and distressing; the thoracic muscles moved with the diaphragm to the last. The breathing was short and catching, as if the lung were oppressed, but not par-

alyzed. He died about twenty-four hours after receiving the injury. No autopsy could be obtained; but there seems reason to conclude that he died of fractured or dislocated ribs, wound of the costal and pulmonary pleuræ, and pneumothorax, since his respiration, pulse, and mode of death differed totally from the other cases. They died with a pulse of 40, and a respiration growing slower and slower. He died with a pulse of 160, and a spasmodic and exceedingly rapid breathing.

Trephining the spine and raising the depressed laminæ restored the inspiratory power of the intercostal muscles, and relieved the diaphragm; it restored, also, the trunk and thighs to sensibility.

If no lesions had existed in the chest, there would seem to be reason to have hoped for a favorable result. Immediate death from pressure on the nervous centre was averted, at any rate, and life prolonged. Reasons enough, surely, to follow up the operation of trephining the spine in an uncomplicated case.

Case 4. — Richard E. J., aged 36, sustained a dislocation of the sixth cervical vertebra, from a fall backwards. This was followed by complete paralysis below the nipples, and partial paralysis of the arms and forearms. Respiration abdominal. A deep depression opposite the sixth cervical vertebra. There was also tympanites, and retention of urine.

Operation. — At the twenty-fourth hour, an incision was made over the seat of injury, and dislocation

forwards found. The trephine was applied and the spinous process and lamina of the sixth, and a portion of the fifth vertebra were removed. The cord was exposed, but no compression found posteriorly. Death occurred in nine hours after the operation. The symptoms were not relieved. Pressure, accidentally applied over the exposed cord, caused the pulse to intermit. The temperature in the axilla was 110° Fahrenheit, just before death. Subsequent examination showed the pressure to have been upon the anterior columns of the cord, and to have been caused by the overlapping of the body of the displaced vertebra.

Case 5. — Chas. C., æt. 37, sustained a dislocation forwards of the atlas, on the axis, from a blow on the neck by a bale of wool. Paralysis was complete. Respiration diaphragmatic; the head held immovable. Dyspnœa, and sense of suffocation; tympanites. An extension was adjusted to the head and neck, and the patient survived four days. We do not learn that the diagnosis was verified by an autopsy. Life prolonged more than an instant where the odontoid process is pressed into the medulla, is, we believe, unknown. As the record is imperfect, we are obliged to insert the case as it is.

No.	Name.	Age.	Injury.	Symptoms.	
				Primary.	Secondary.
1	James G. IX. 200.	40	Fracture of vertebræ from fall of 25 ft. Blow received on back.	Great pain. Crepitus at 5th and 6th dorsal vertebræ. Paralysis of motion and sensation in lower extremities. Collapse. Emphysema. Consciousness perfect.	Paralysis continued. Priapism. Dyspnœa. Coma.
2	Michael B. X. 57.	21	Fall backward from back of wagon on which he was sitting. Dislocation of 5th and 6th cervical vertebra.	Great pain at seat of injury. Paralysis of lower extremities, and of trunk below line of nipples. Retention of urine and fæces; immobility of neck. Abdominal respiration.	Dyspnœa. Tympanites. Irregular pulse. Incoherent speech. Diminished respiration till death.
3	Richard E. S. XIII. 186.	36	Dislocation of 6th cervical vertebra from fall backward.	Complete paralysis below line of nipples. Partial paralysis of arms and forearms. Respiration abdominal. Deep depression opposite 6th cervical vertebra.	Tympanites. Retention of urine and fæces. Temperature of skin increased. Pain in neck and arms.
4	Charles C. XIX. 220.	37	Dislocation forwards of atlas, from blow on back of neck by a bale of wool.	Paralysis complete. Consciousness perfect. Respiration diaphragmatic. Immobility of head. Pain over atlas. Projection of trachea.	Dyspnœa. Thirst and "sense of suffocation." Tympanites.

COMPLICATIONS.		TREATMENT.	RESULT.	SURGEON.	REMARKS.
PRIMARY	SECONDARY.				
Probable fracture of ribs.	Emphysema.	Incision made down on fractured vertebræ, and the comminuted spinous processes of the 2d, 3d, 4th and 5th dorsal vertebræ, and laminæ of 3d and 4th removed. Removed with forceps and trephine, leaving spinal cord exposed over the space of four vertebræ; its substance at one point being lacerated slightly.	Death, 24 hours.	Dr. Cheever.	Respiration modified by operation. No autopsy.
		Expectant.	Death, 50 hours.	Dr. Cheever.	No autopsy.
		At 24th hour, incision made on seat of injury, and dislocation forward diagnosticated. Trephine applied and spinous process and laminæ of 6th, and part of spinous process and laminæ of 5th vertebræ removed. Cord exposed one inch in length.	Death, 9 hours after operation; 33 after injury.	Dr. Cheever.	Symptoms not ameliorated by operation; rapid sinking transpired at once. During operation accidental application of cold or pressure to the cord gave great pain and intermittent pulse. Temperature in axilla just before death 110° Fahrenheit.
		Extension adjusted to head and neck.	Death, 4 days.	Dr. Thaxter.	Record imperfect.

XII. COMPOUND FRACTURES.

This class of injuries, numbering 120 in all, were very severe, and often fatal. In those of the lower extremity, particularly, the excessive mutilation to which the parts had been subjected by steam-power called for primary amputation in very many cases.

Many were brought to the hospital in a dying condition; others sank after amputation; while a third, and large class, refusing amputation, lingered on for weeks in a state of chronic suppuration, to fall the prey to erysipelas or pyæmia; or to succumb, at last, under an operation, which, if done seasonably, would have saved their lives. It was often a difficult question to decide as to how soon after the injury primary amputation should be performed.

Personally we cannot agree with those authorities who advise immediate amputation while the patient is in a state of shock. We believe that the golden opportunity is to be found during that period of reaction, within twelve hours after the injury, which comes on then if the patient rallies at all. And we think we are justified in saying that the experience of the other surgeons corresponds with our own, and that the tendency in this hospital is to wait for reaction to be well established, rather than run the additional risk of collapse from too early interference.

On the other hand, the statistics of compound fractures in the following tables bring out very strongly the difference in the fatality between those

of the upper and those of the lower extremity, and the great contrast between the results of expectant treatment in the one and in the other.

The compound fractures of the thigh were, as might be expected, very fatal. Most were complicated with extensive laceration, stretching and bruising of the long muscles of that region. Of 16 cases, 12 died, and 4 recovered — a mortality of 75 per cent. Eleven of the twelve deaths are recorded as from shock. The other one lived a number of days after amputation. Four compound fractures of the femur recovered without any amputation. One of these was a compound fracture into the knee-joint, which recovered in 50 days.

No.	Name.	Age	Occupation.	General Condition.	Injury.	Complications.
1	Maurice L. 1. 131.	23	Teamster.	Poor.	Comp. com. fr. into elbow joint.	Fr. tibia and fibula.
2	Thomas L. 1. 143.	17	Baker.		Comp. com. fr. humerus in shaft, and into elbow.	Lacerated scalp wound.
3	John R. 1. 219.	32	Printer.		Comp. com. fract. into elbow joint.	
4	Joseph C. 2. 214.	49	Mason.		Comp. com. fract. ulna and radius into wrist.	Fracture of three ribs.
5	Myron L. S. 2. 255.	45	Carpenter.	Fair.	Severe comp. com. fract. ulna from circular saw accident.	
6	Bernard McJ. 3. 65.	52	Engineer.	Habits intemperate.	Severe comp. com. fract. of ulna, with extensive laceration of soft parts; railroad injury.	Secondary hemorrhage, necrosis.
7	Patrick L. 3. 181.	30	Rope-maker.		Comp. com. fract. of ulna and radius.	Fract. of humerus.
8	Edmund A C. 3. 197.	31	Currier.	Healthy.	Comp. com. fract. of ulna and radius. Comp. opn'g small.	
9	Patrick J. S. 5. 54.	9		Good.	Comp. com. fract. of carp. ulna and rad., with sev'e crushing.	
10	Jane T. 5. 74.	6		Poor.	Comp. com. fract. of humerus; railroad accident.	Comp. com. fract. lower jaw.
11	John C. 5. 83.	30	Laborer.	Indifferent.	Comp. com. fract. of elbow joints.	
12	John S. 5. 257.	40	Laborer.	Healthy.	Comp. com. fract. of humerus, with great laceration.	
13	Thomas F. 7. 238.	20	Laborer.		Comp. fracture of humerus; severe crushing of arm.	Fract. femur.
14	Frank G. 8. 31.	36	Merchant.		Severe lac. wound of forearm, with comp. com. fract. of both bones.	
15	Julia O'B. 9. 71.	12		Healthy.	Comp. fract. of radius and ulna.	
16	John D. 9. 210.	13	Baker.	Healthy.	Comp. fract. of humerus, slight hemorrhage.	
17	Henry A. G. 10. 33.	45			Comp. com. fract. of both humeri, with extensive laceration.	Lac. wound of thigh.
18	Conrad R. 10. 267.	34	Laborer.		Comp. com. fract. of humerus, ulna and radius, extensive laceration.	Comp. com. fract. of femur, tibia and fibula into knee.
19	Edward K. 11. 26.	9		Healthy.	Comp. com. fract. of humerus; railroad accident.	

Treatment.	Result.	Surgeon.	Remarks.
Primary amputation at shoulder joint.	Death 23 hours.	Dr. Thaxter.	
Primary amputation at shoulder joint.	Recovery 89 days.	Dr. Thaxter.	
Partial primary excision of elbow. Int. ang. splint.—Cold water dressing. Amputation at shoulder after 9 days.	Death without reaction from operation.	Dr. Thaxter.	Much reduced by delirium tremens before amp.
Primary amputation of forearm.	Recovery 60 days.	Dr. Stedman.	
Primary amputation of forearm.	Recovery 47 days.	Dr. Homans.	
Dry dressing first 24 hours; resection of fractured extremities of ulna, the periostum being dissected from the fragments. Removal of bruised muscles. Water dressing; wound painted with Tr. Ferri perchloridi.	Very good recovery after 166 days; rotation of radius, fair.	Dr. Buckingham.	
Primary amputation of arm.	Recovery 81 days.	Dr. Cheever.	
Resection of fractured extremities. Rest on splint with wet dressing.	Recovery with good union in 40 days.	Dr. Cheever.	
Primary amputation of forearm.	Recovery 91 days.	Dr. Thaxter.	
Primary amp. at shoulder joint.	Death from shock, 3 days.	Dr. Thaxter.	
Removal of fragments and resection of fract. extremities; wet dressing.	Recovery after 134 days, wound healed and moderate motion.	Dr. Thaxter.	
Primary amp. at shoulder joint.	Recovery 42 days.	Dr. Buckingham.	
	Patient died of shock.	Dr. Thaxter.	
Primary amp. of arm.	Recovery 35 days.	Dr. Homans.	
Antero posterior splints.	Recovery 28 days.	Dr. Thaxter.	
Inside ang. splint. Light dressing.	Recov'ry with good union. 155 days.	Dr. Coolidge.	
Primary amp. of one arm. Int. ang. splint., &c., to other arm.	Death from collapse 48 hours.	Dr. Stedman.	
Primary amp. at shoulder joint.	Death immediately from shock.	Dr. Coolidge.	
Primary amp. at shoulder joint.	Death from pyæmia 13 days.	Dr. Cheever.	

(*Continued.*)

No.	Name.	Age	Occupation.	General Condition.	Injury.	Complications.
20	Margaret C. 13. 149.	45	Domestic.	Healthy.	Comp. fract. of ulna and radius. External wound ½ in. in diameter, considerable subcutaneous bruising and hemorrhage.	
21	Daniel B. 14. 34.	49	Laborer.	Healthy.	Comp. com. fract. of humerus into elbow joint.	
22	Dennis G. C. 14. 76.	15	Book-binder.		Comp. fract. of both humeri.	Concussion.
23	Dennis K. 14. 109.	5		Healthy.	Comp. fract of carpus, contusion of forearm.	
24	Hannah F. 15. 246.	21	Domestic.	Healthy.	Comp. com. fract. of ulna, radius and humerus, from fall.	Severe contusion and lacerated wound.
25	Ellen Wilton. 17. 273.	12		Healthy.	Comp. fract. of humerus into elbow, severe laceration.	
26	Susan R. 18. 6.	80		Healthy.	Com. fract. of ulna and radius, external, wound small.	
27	John O'C. 19. 44.	30	Painter.		Comp com. fract. of humerus. Railroad accident.	Severe laceration.
28	George D. 19. 186.	45	Station Master.	Healthy.	Comp. com. fract. of ulna, radius and humerus.	
29	Giovanni R. 20. 15.	34	Bartender.	Healthy.	Comp. com. fract. of humerus into elbow.	Severe laceration.
30	Richard N. 20. 211.	17	Mechanic.	Healthy.	Comp. com. fract. of humerus.	Severe laceration comp. com. fract. of tibia and fibula.
31	Joseph G. 20. 271.	12		Healthy.	Comp. fracture ulna and radius. Large comp. opening.	
32	Hiram E. S. 21. 40.	27	Driver.	Healthy. Habits intemperate.	Comp. com. fract. of humerus.	Delirium tremens.
33	John D. F. 21. 92.	25	Paper Hanger.	Healthy.	Comp. com. fract. of humerus.	Secondary hemorrhage.
34	James N. 22. 1.	31	Printer.	Healthy.	Comp. com. fract. of ulna and radius into elbow.	Severe laceration.
35	George A. P. 22. 26.	26	Engineer.	Healthy.	Comp. com. fract. of fingers and metacarpus.	Severe laceration.
36	Oliver R. 22. 56.	46	Laborer.	Healthy.	Comp. com. fract. of ulna and radius, comp. opening lacerated, and three inches in diameter.	Fract. of humerus.
37	Robert C. 24. 82.	28	Printer.		Comp. com. fract. of elbow joint involving all the bones	
38	Sarah H. 24. 88.	44	Domestic.	Healthy.	Comp. com. fract. of ulna and radius.	
39	Jonathan P. 24, 130.	42	Teamster.		Comp. com. fract. of radius and ulna.	Delirium tremens.

Recapitulation.

Recovered 23. Died 16; (Shock, 7; Sec. Hemorrhage, 2; Pyæmia, 5; Exhaustion 2.)

(*Continued.*)

Treatment.	Result.	Surgeon.	Remarks.
Wound plugged with carbolic acid and glycerine in equal parts, on lint; fragments in good position; arm on splint.	Recovery with good result, in 89 days.	Dr. Derby.	For a week the appearance of the arm was threatening and sloughing was feared; but the symptoms subsided, and the ulcer healed kindly.
Primary amp. of arm.	Death from pyæmia, 7 days.	Dr. Buckingham.	
Partial resection of both fractured bones.	Death 24 days, exhaustion.	Dr. Buckingham.	
Primary amp. of forearm.	Recovery 52 days.	Dr. Buckingham.	
Expectant and palliative.	Death from collapse and exhaustion, 6 days.	Dr. Cheever.	
Primary amp. advised and refused — simple dressing. Secondary amp. of arm after 17 days.	Recovery 40 days.	Dr. Derby.	
Carbolic acid and glycerine in equal parts on lint to wound. Rest in splint.	Perfect recovery with firm union, 51 days.	Dr. Thorndike.	No pus.
Primary amp. of arm.	Recovery 69 days.	Dr. Thaxter.	
Primary amp. of arm.	Death 8 days, from secondary hemorrhage.	Dr. Thaxter.	
Primary resection. Secondary amp. at shoulder joint, after 25 days.	Recovery 25 days after amp., 71 after injury.	Dr. Ropes.	
Primary amp. at shoulder joint.	Death from collapse, 24 hours.	Dr. Homans.	
Amp. of forearm, primary.	Recovery 42 days.	Dr. Homans.	
Primary amp. of arm.	Recovery 27 days.	Dr. Cheever.	
Primary amp. of arm at shoulder joint.	Death from secondary hemorrhage, 11 days.	Dr. Cheever.	
Primary amp. of arm in upper third.	Recovery 38 days.	Dr. Homans.	
Primary amp. of forearm.	Recovery 23 days.	Dr. Homans.	
Resection of fract. extremities (primary.) Free exit to pus; arm and forearm in splints.	Recovery with good results to both bones 117 days.	Dr. Thorndike.	
Secondary amp. of arm.	Death 31 days.	Dr. Ropes.	
Secondary amp. of arm.	Death 22 days.	Dr. Ropes.	
Wound plugged with carbolic acid and glycerine (i-viij) on lint. Secondary amp. of arm after 5 days.	Death 25 days.	Dr. Ropes.	

Ratio of mortality, 41 per cent. Amputations. — Prim. 22; Secondary, 4; Expectant Treatment, 13. Ratio of Amputation, 63 per cent.

No	Name.	Age	Occupation.	General Condition.	Injury.	Complications.
1	Michael D. 1. 29.	11		Healthy.	Comp. com. fracture of tibia and fibula.	
2	Anthony D. 1. 161.	30	Laborer.	Habits intemperate.	Comp. com, fract. of tarsus and metatarsus.	Lacerated scalp wound. Contusion of back.
3	Thomas O'M. 1. 165.	23	Laborer.		Comp. com. fract. of tibia and fibula.	
4	Thomas C. 1. 185.	17	Laborer.		Comp. com. fract. of both tibia and fibula.	Excessive shock.
5	Abner T. 1. 207.	27	Laborer.	Habits intemperate.	Comp. com. fract. of tibia and fibula.	Compound com. fracture of opposite tarsus requiring amputation of leg.
6	George W. 1. 237.	26	Machinist.	Good.	Comp. com. fract. of tibia and fibula by machinery.	Bed sores. Delirium tremens.
7	Michael McM. 2. 15.	10		Healthy.	Comp. com. fract. of metatarsus.	Fract. femur of same side.
8	Robert F. G. 2. 49.	6			Comp. fract. of femur. Soft tissues much lacerated.	Fract. of cranium.
9	John G. 2. 59.	24	Laborer.	Healthy.	Comp. fract. of tibia and fibula into ankle.	
10	William G. 2. 67.	69	Machinist.	Fair.	Comp. fracture of tibia and fibula. Compound opening, one inch square.	
11	John D. 2. 59.	70	Laborer.	Aged and feeble.	Comp. fract. of femur into knee.	
12	Garritt F. 2. 99.	48	Machinist.		Comp. fract. of tibia and fibula. Compound opening $\frac{1}{2}$ in. diameter.	
13	Aaron B. 2. 234.	32	Soldier.	Fair.	Comp. fract. femur into knee. Joint opened at side of ligamentum patellæ.	Anchylosis of knee from old gunshot wound.
14	Thomas B. 2. 248.	8		Healthy.	Com. fract. of tibia. Opening admitted a probe easily.	
15	Mary M. 1. 230.	36		Healthy.	Fract. of tibia and fibula.	Abscesses formed at seat of fracture, after five days. Incised, and fracture made comp. Necrosis supervened.
16	William H. C. 3. 69.	16	Soldier.		Severe comp. com. fracture, both tibiæ and fibulæ.	
17	Mary J. S. 5. 32.	9		Good.	Comp. com. fract. of tibia and fibula.	Necrosis.

Treatment.	Result.	Surgeon.	Remarks.
Primary amputation.	Recovery 24 days.	Dr. Cheever.	
Fract. box, wrapped in cotton. Secondary amputation.	Recovery 130 days.	Dr. Thaxter.	Treatment failed to arrest the progressive gangrene.
Primary amputation of thigh.	Recovery 141 days.	Dr. Thaxter.	
Light splints and sand-bags to sides of limbs. Cold water dressing.	Death 23 days.	Dr. Thaxter.	Wounds became gangrenous.
Primary amputation of thigh.	Recovery 328 days.	Dr. Thaxter.	Recovery retarded by delirium tremens, necrosis and bed-sores.
Primary amputation of thigh.	Death 30 days.	Dr. Thaxter.	Progressive exhaustion.
Primary amputation of leg.	Recovery 96 days.	Dr. Stedman.	
	Death from shock 9 hours.	Dr. Cheever.	No operation admissible.
Fracture box, with light dressing. Amputation advised.	Removed by friends second day after entrance.	Dr. Homans.	
Fract. box; light dressing: Amputation of leg 19 days after injury.	Recovery 153 days.	Dr. Homans.	
Primary amputation of thigh.	Death three hours from collapse.	Dr. Homans.	
Carved splints (lateral), with comp, opening sealed with cotton and collodion. Leg on side, after 14 days flexed position in Pott's splint. Fract. box after 24 days, with extension in axis of limb. Immovable bandage of starch.	Discharged wearing starched bandage and able to walk well, 98 days after injury. Good union.	Dr. Homans.	
Rest on ham splint. Light dressing to wound.	Recovery 50 days.	Dr. Buckingham.	
Goodwin's carved splint. Wound left open. Good diet and tonics. Starch bandage after 14 days.	Recovery perfect in 52 days.	Dr. Homans.	
Fract. box, with light dressing. Extra diet.	Recovery in 90 days, with well marked union of bones and slight necrosis of tibia.	Dr. Thaxter.	
Amp. of right thigh and left leg.	Death from shock in one hour.	Dr. Buckingham.	
Fract. box, with light dressing. Necrosis removed 109 days after injury.	Recovery in 171 days.		

(*Continued.*)

No.	Name.	Age	Occupation.	General Condition.	Injury.	Complications.
18	Elizabeth T. 5. 80.	47		Healthy.	Comp. fract. of tibia and fibula.	Excessive suppuration. Gangrene.
19	Alex. T. Y. 5. 166.	29	Seaman.	Healthy.	Comp. fract. of femur; opening ½ in. in diameter. Laceration of soft parts.	Erysipelas. Profuse suppuration.
20	John F. 7. 30.	40	Seaman.	Healthy.	Comp. com. fract. of fibula.	Gonorrhœa.
21	John D. M. 7. 184.	11		Good.	Comp. fracture of tibia.	Necrosis.
22	Patrick M. 7. 200.	51	Laborer.	Healthy.	Comp. com. fract. of tibia and fibula; wound small; hemorrhage marked.	
23	Maria C. 8. 39.	37			Comp. fract. femur.	
24	Frank E. 8. 44.	27	Switch tender		Comp. com. fract. of femur, and both tibiæ and fibulæ.	Fract. ribs and clavicle.
25	Richard D. 8. 57.	45	Laborer.	Intemperate habits.	Comp. com. fract. of tarsus; fract. tibia and fibula.	
26	Annie F. 8. 120.	40		Habits intemperate.	Comp. fract. of tibia and fibula into joint.	
27	Elias W. 9. 8.	52	Foreman.	Healthy. Habits intemperate.	Both feet crushed off at ankle joint.	
28	Ellen S. 9. 272.	23	Domestic.	Healthy.	Extensive lacerated wound of thigh with fracture of external condyle of femur into knee.	
29	Michael R. 9. 185.	13			Complete amputation of thigh, compound com. fracture of other by railroad accident.	
30	Charles S. 10. 224.	26	Merchant.		Compound fracture of tibia and fibula; opening 3 in. square. Slight hemorrhage.	
31	Conrad R. 10. 267.	34	Laborer.		Compound com. fracture of femur, tibia and fibula into knee. Extensive laceration of soft parts.	Compound com. fracture of humerus, ulna and radius. Requiring primary amputation at shoulder.

(*Continued.*)

Treatment.	Result.	Surgeon.	Remarks.
Carved splint, leg straight, with wet dressing. Repeated abscesses incised. Fracture box, and on pillow, and at times supported in adhesive bands suspended to tin cradle. Amp. of thigh after 118 days.	Incomplete recovery, 319 days after the injury.	Dr. Buckingham.	In spite of all temporizing measures, local and constitutional, suppuration, phagedena, and gradual retrogression continued, rendering amp. necessary.
Coaptation splints to thigh; extension by weight, continued five days. Posterior tin splints, extending whole length.	Recovery, 113 days, with good union, and only moderate shortening and deformity; a serviceable limb.	Dr. Buckingham.	
Fracture box, with simple dressing.	Recovery perfect, 71 days.	Dr. Cheever.	
Simple dressing to wound, hemorrhage being first stopped by pledget of lint; afterwards dressed with sol. Bromine. The leg on cushion.	Recovery after 69 days, union being good, and only a slight external wound being left.	Dr. Cheever.	
Fract. box, with firm pressure, and, after 13 days, inside carved splints flexed; wound healed well, and starch bandage was applied after 50 days.	Recovery after 60 days, with ½ inch shortening, and slight deformity. Good union.	Dr. Thaxter.	
Extension by weight, with coaptation splints, starch bandage after 51 days. Sayre's splint applied toward end of treatment.	Discharged after 156 days, with questionable union, and without external wound.	Drs. Homans and Coolidge.	
	Died of shock, without treatment.	Dr. Homans.	
Primary amputation of leg.	Recovery 187 days.	Dr. Homans.	
Leg in fract. box, with light dressing. Secondary amp. after 19 days.	Death 29 days after injury.	Dr. Coolidge.	
Primary amputation of both legs.	Death from shock seven hours.	Dr. Thaxter.	
Primary amputation of thigh.	Death six days from exhaustion.	Dr. Thorndike.	
	Death from shock before treament.		
Fracture box, simple dressing.	Death 10 days.	Dr. Homans.	Erysipelas and gangrene supervened on 3d day, and exhaustion was progr'sive.
Primary amputation of thigh.	Death immediate.	Dr. Coolidge.	

(*Continued.*)

No.	Name.	Age	Occupation.	General Condition.	Injury.	Complications.
32	David O'K. 11. 65.	47	Shoemaker.	Habits intemperate.	Compound fracture of tibia.	
33	John H. 11. 75.	3			Compound commin. fracture of tarsus.	
34	Daniel H. 11. 181.	60	Laborer.	Healthy.	Compound commin fracture of tibia and fibula.	Fracture of femur.
35	James Mc'N. 11. 264.	34	Plumber.	Habits intemperate.	Compound commin. fracture of tibia and fib. into ankle joint.	
36	Frederick C. P. 11. 238.	29	Merchant.	Healthy.	Compound commin. fracture of tibia and fibula.	
37	Martin C. 12. 44.	21	Laborer.	Healthy.	Compound commin. fracture of femur, tibia and fibula.	Compound commin. fracture of ulna and radius.
38	John C. 12. 116.	25	Iron-worker.	Healthy.	Compound commin. fracture of tibia with extensive lacerated wound of dorsum of foot and ankle.	
39	John M. 12. 144.	29	Brakeman.		Compound fracture of os calcis, with extensive laceration.	
40	John K. 12. 248.	30	Laborer.		Compound commin. fracture of tibia and fibula.	Concussion and contusions.
41	John C. 12. 265.	31	Laborer.		Compound commin fracture of femur and tibia and fibula.	Extreme shock.
42	Frank S. 13. 54.	9		Healthy.	Comp. fract. of shaft of femur; external wound small. Hemorrhage slight.	
43	James M. 13. 69.	52	Machinist.	Habits intemperate.	Comp. com. fract. of tibia and fibula. External wound large, and hemorrhage considerable.	
44	John D. 13. 206.	59	Laborer.		Comp. com. fract. of tibia and fibula. External wounds small and hemorrhage considerable. Tibial arteries obliterated. Limb much swollen and emphysematous.	
45	James McC. 13. 213.	22	Brakeman.		Comp. com. fract of tibia.	Fract. of both femurs.
46	Nunz M. 14. 36.	39	Gardener.	Habits intemperate.	Comp. com. fract. of tibia and fibula. R. R. accident.	

(*Continued.*)

Treatment.	Result.	Surgeon.	Remarks.
Primary amputation of leg.	Recovery 277 days.	Dr. Cheever.	Patient in low condition; passed thro' repeated attacks of delirium tremens.
Primary amputation of leg.	Recovery 71 days.	Dr. Cheever.	
	Death without treatment, from shock.		
Primary amputation of leg.	Death from shock, six hours.	Dr. Homans.	
Primary amputation of thigh.	Recovery 34 days.	Dr. Cheever.	
	Death from shock, immediate.		
Partial resection. Smith's anterior splint, simple dressing. Secondary amputation of thigh after eight days, gangrene having developed.	Recovery 129 days.	Dr. Coolidge.	
Amputation advised, but declined. Patient taken away by friends, second day after entrance.	Died (out of the hospital) of pyæmia.	Dr. Coolidge.	
Primary amputation of thigh.	Recovery 114 days.	Dr. Cheever.	
	Death from shock one hour.	Dr. Buckingham.	
Fragments adjusted, and extension applied. Wound covered with a pledget of lint saturated with carbolic acid and glycerine in equal parts. Crust formed and retained 31 days, a slight discharge escaping from beneath it in the interval.	Recovery perfect in 52 days; no shortening or deformity.	Dr. Derby.	Very slight suppuration, and only moderate constitutional disturbance.
Leg adjusted in fract. box; wound covered as above. Irrigation applied.	Death 13 days, from erysipelas and pyæmia.	Dr. Derby.	
Leg in good position, and treated with carbolic acid as above. Stimulants.	Recovery 199 days, with considerable deformity, but good union.	Dr. Derby.	The ulcers were slow in healing, circulation of the limb being feeble.
	Death from shock immediate, without treatment, except stimulation.		
Primary amp. of thigh.	Death from pyæmia, 20 days.	Dr. Cheever.	

(*Continued.*)

No.	Name.	Age	Occupation.	General Condition.	Injury.	Complications.
47	Abraham H. 14. 58.	21	Fireman.	Healthy.	Comp. com. fract. of femur into knee.	Crush of opposite foot.
48	Timothy. C. 14. 69.	22	Laborer.		Comp. com. fract. of tibia and fibula; entering one week after injury and in poor condition.	
49	Martin M. 14. 71.	13		Healthy.	Comp. com. fract of tibia and fibula.	
50	Ellen S. 14. 164.		Domestic.	Very poor. Habits intemperate.	Comp. com. fract. of tibia and fibula.	Delirium tremens.
51	Thomas D. 14. 180.	14		Healthy. Patient deaf and dumb.	Comp. com. fract. of tibia and fibula. R. R. accident.	
52	Edward K. 14. 217.	25	Laborer.	Drunkard.	Comp. com. fract. of tibia and fibula.	Shock considerable.
53	Thomas C. 16. 16.		Laborer.	Habits intemperate.	Comp. fract. tibia, with dislocation at ankle.	Delirium tremens.
54	Eugene B. 16 41.	9			Comp. frac. tibia in upper third; external wound one inch long; hemorrhage slight.	
55	William D. 16. 118.	46	Laborer.		Comp. frac. of tibia and fibula, considerable hemorrhage.	
56	Moody C. S. 17. 10.	38	Foreman.	Healthy.	Compound fracture of femur.	Extreme shock.
57	John C. 17. 64.	44	Laborer.	Healthy.	Comp. frac. of tibia. Very small external wound; entering 60 hours after injury.	Fract. of fibula.
58	Daniel S. 16. 183.	53	Peddler.	Unhealthy.	Comp. com. fract. of tarsus. R. R. injury.	Extreme shock.
59	Sarah J. W. 17. 227.	17	Papermaker.	Healthy.	Comp. com. fract. of metatarsus, from boiler explosion.	
60	Frank B. 18. 204.	9		Healthy.	Comp. fracture of femur.	Severe laceration.
61	James McJ. 18. 31.	35	Shoemaker.	Poor.	Comp. fract. of tibia and fibula, primarily simple.	Obstinate diarrhœa. Erysipelas and gangrene; necrosis.
62	Richard B. 18. 221.	30	Laborer.		Comp. com. fract. of both legs; R. R. accident.	Extreme shock; comp. fract. of humerus.
63	James F. D. 18. 240.	27	Laborer.	Healthy.	Comp. com. fract. of tibia; opening of small size.	Hemorrhage from ruptured saphena interna vein.
64	Peter C. 18. 242.	47	Painter.	Habits intemporate.	Comp. com. fract. of tibia and fibula.	

(*Continued.*)

Treatment.	Result.	Surgeon.	Remarks.
Primary amp. of thigh.	Death from collapse, 36 hours.	Dr. Buckingham.	
Disinfectant treatment by potass. permang. locally. Setons through suppurating part.	Death from pyæmia, 29 days.	Dr. Buckingham.	
Limb adjusted in tin splint, and in Smith's ant. splint. Pus freely evacuated as fast as formed.	Recovery with good union, 123 days.	Dr. Buckingham.	Free suppuration, with phagedæna and slight necrosis.
Primary amp. of leg.	Death in six days, exhaustion.	Dr. Homans.	
Primary amp. of thigh.	Death 27 days, pyæmia.	Dr. Homans.	
Stimulation. Simple palliative treatment of limb.	Death 60 hours, from collapse.		
Fragments adjusted well and limb laid in Pott's splint with single dressing to wound. Incisions to evacuate pus.	Death 10 days, pyæmia.	Dr. Homans.	
Fragments adjusted in fracture box, and wound filled with lint with carbolic acid and glycerine in equal parts.	Recovery, with good union and slight deformity, 123 days.	Dr. Homans.	
Leg in fracture box 12 days, then on pillow, and suspended. Simple dressing to wound.	Recovery after slight necrosis, 110 days.	Dr. Thorndike.	
Primary amputation of thigh.	Death 48 hours from collapse.	Dr. Derby.	
Leg in fracture box. Pledget of lint with carbolic acid and glycerine to wound.	Recovery 85 days, union after 33 days.	Dr. Derby.	No pus.
Primary amputation of leg.	Death five hours from shock.	Dr. Derby.	
Primary amputation of foot.	Death 26 days from tetanus.	Dr. Derby.	
Primary amp. of thigh.	Death 8 hours from shock.	Dr. Ropes.	
Fracture box with fomentations. General remedies: Poultices. Disinfectant dressing to ulcerations. Secondary amputation of leg after 68 days.	Death from exhaustion 11 days after amp.; 79 days after injury.	Drs. Thorndike and Ropes.	
	Death from shock imdiately after entrance.		
Carbolic acid and glycerine in equal parts to wound on lint; leg on pillow; secondary amputation on third day.	Recovery 63 days.	Dr. Ropes.	Primary treatment failed to arrest the tendency to mortification in the leg.
Primary amp. of thigh.	Death 3 days from shock.	Dr. Ropes.	

(*Continued.*)

No.	Name.	Age	Occupation.	General Condition.	Injury.	Complications.
65	Charles M. S. 19. 7.	17	Marketman.	Healthy.	Comp. com. fract. of tibia and femur into knee, and in shafts.	Comp. fracture of ulna and radius, extreme shock.
66	Thomas N. 20. 49.	23	Clerk.	Healthy.	Comp. com. fract. tibia and fibula. R. R. accident.	
67	Frank McK. 20. 194.	25	Cook.	Healthy.	Comp. com. fract. tib. and fib. into ankle. R. R. accident.	
68	E. F. B. 20. 208.	30	Teamster.	Healthy.	Comp. com. fract. of tibia and fibula. Exter. wound small.	
69	Timothy L. 20. 211.	17	Mechanic.		Comp. com. fract. of tibia and fibula. Severe laceration.	Comp. com. fract. of humerus requiring amputation.
70	Patrick G. 21. 12.	46	Carpenter.	Habits intem.	Fract. of tibia and fibula, made compound after 7 days, by the violence of repeated and prolonged attacks of delirium tremens.	Necrosis.
71	Christop'r H. 21. 144.	45	Laborer.	Habits intem.	Comp. com. fract. of both tibiæ and fibulæ. R. R. accident.	Extreme shock.
72	Margaret B. 21. 216.	40		Healthy.	Comp. com. fract. of tibia and fibula into ankle. Exter. opening small.	
73	Patrick M. 22. 180.	24	Laborer.	Healthy.	Comp. com. fract. of both tibiæ and fibulæ. R. R. accident.	Great collapse.
74	Ambrose L. 22. 242.	63	Merchant.	Healthy.	Comp. com. fract. of tibia and fibula from explosion.	
75	William S. 22. 266.	15		Healthy.	Comp. fract. of tibia and fibula. Exter. wound one in. diameter.	Fract. of pelvis thro' acetabulum.
76	Caleb B. 23. 9.	45	Laborer.	Intemperat e.	Comp. com. fract. of both tib. and fib.	Collapse.
77	Frederick N. 23. 10.	20	Carpenter.		Comp. fract. of tibia and fibula, the upper fragment of tibia protruding.	Abscesses.
78	Joseph L. 23. 38.	35	Merchant.	Healthy.	Comp. com. fract. of tibia and fibula into knee.	Pyæmia.
79	John W. 23. 55.	24	Carpenter.	Intemperate.	Comp. com. fract. of tibiæ and fibulæ.	Delirium tremens. Shock.
80	James H. 24. 16.	57	Laborer.	Depressed.	Comp. com. fract. of tibia and fibula.	Great shock.
81	Abby H. 24. 60.	40			Comp. fract. of tibia and fibula — secondary.	Exhaustion. Delirium tremens.

(*Continued.*)

Treatment.	Result.	Surgeon.	Remarks.
Stimulants.	Death, four hours from collapse.	Dr. Derby.	
Primary amputation of leg.	Recovery 67 days.	Dr. Ropes.	
Primary amputation of leg.	Recovery 73 days.	Dr. Homans.	
Primary amp. advised but declined. Fract. box. Simple dressing to wound. Free exit to pus.	Recovery 75 days.	Dr. Homans.	
Expectant. Stimulants.	Death from shock.	Dr. Homans.	
Fract. box primarily with light dressing. Secondary amp. of leg, seventeen days after fracture was made compound.	Recovery 55 days after amputation; 79 days after injury.	Dr. Cheever.	
Stimulants.	Death from collapse, one hour.	Dr. Cheever.	
Limb in Pott's splint. Wound filled with lint and carbolic acid and glycerine in equal parts. Secondary amputation of leg twelve days after injury.	Death from pyæmia, 9 days after amp.; 21 days after injury.	Dr. Cheever.	Primary treatment failed to arrest the development of gangrene, and the constitutional state at the operation was low and depressed.
Surg. treatment contra-indicated.	Death from shock, 13 hours after entrance.	Dr. Cheever.	
Primary amp. of thigh.	Death from collapse, 48 hours.	Dr. Cheever.	
Primary partial resection. Leg adjusted in swinging splint.	Death 18 days; exhaustion.	Dr. Thorndike.	
Primary amputation.	Death 18 hours.	Dr. Derby.	
Leg in fracture box with wound covered with carbolic acid and castor oil.	Good union after 23 days.	Dr. Derby.	
Amp. of thigh (primary).	Death 35 days.	Dr. Derby.	
Resection of fractured ends. Leg in fract. box.	Death 17 days.	Dr. Derby.	Death from exhaus. and delirium trem.
Amp. of thigh (primary).	Death 4 days.	Dr. Thorndike.	
Leg in fracture box, with oakum packing.	Death 5 days.	Dr. Ropes.	

RECAPITULATION.

Recovered, 32. Died, 49 (shock, 26; pyæmia, 8; exhaustion, 9; other causes, 6). Ratio of mortality — 60 per cent. Amputation — primary, 38; secondary, 9; total, 47 (recovered, 18; died, 22). Expectant treatment — recovered, 13; died, 28 — 68 per cent. Average of convalescence, 114 days. Ratio of amputation, 58 per cent.

Strenuous exertions were made, in such cases as admitted of doubt, to preserve the arm, or the leg. Very many of these failed, owing chiefly to the bad habits and constitution of the patient, the season of the year, and the occasional attacks of epidemic or contagious influences in the hospital. Unquestionably, in the open country, and among temperate and healthy country people, remarkable results are obtained in conservative surgery. In the city, among the poorer classes, a very different state of constitution prevails.

Different forms of disinfectant dressing, particularly a thorough syringing of cavities and sinuses, with a solution of Permanganate of Potash, half a grain to the ounce: or, Carbolic Acid, as a dressing, of a strength ranging from a drachm to the pint, up to equal parts, with Glycerine, were used with benefit. We do not think it is yet time to decide on the asserted overwhelming merits of Carbolic Acid. While it was largely used, the Hospital was quite free from erysipelas and pyæmia for many months; but cases finally broke out while it was still employed. Again, longer periods of entire exemption from infectious diseases have occurred since, while other dressings were used. Milder dressing for compound fractures

gave as good results as carbolic acid, though many bad cases did admirably under its use. During one term of service, of four months, we dressed every open wound with carbolic acid. We are quite sure it retards granulation.

XIII. AMPUTATION.

There were 137 amputations, as follows: —

Shoulder,	11	Thigh,	41
Arm,	27	Leg,	34
Forearm,	17	Foot,	5
Hip,	2		137

These include operations for both injury and disease; primary and secondary.

The following is a comparison of the ratio of mortality: —

	In the Crimea.	U. S. Armies.	London Hospitals.	Boston City Hospital.
	per cent.	per cent.	per cent.	per cent.
Shoulder	.27	.39	.30	.63
Arm	.17	.21	.30	.38
Forearm	not given.	.16	not given.	.12
Hip	100 (?)	.85	" "	100
Thigh	.62	.64	.60 to 74	.56
Leg	.30	.26	.32	.32
Foot	.17	.09	not given.	.40

We find in Civil Hospitals that the primary amputations are much more fatal than the secondary ones, thus: —

	City Hospital.	
	Primary.	Secondary.
Shoulder	.66	.50
Thigh	.83	.43
Leg	.41	.33

But in military practice the reverse holds true, viz:

	In the Crimea.		U. S. Armies.	
	Primary.	Secondary.	Primary.	Secondary.
Thigh	.46	.78	.54	.74

Again, in the Paris Hospitals, of 44 *primary* amputations of the thigh, 34 died; (Malgaigne.) And of 24 *primary* amputations of the thigh done in Edinburgh, Glasgow and London, of this series, *all* died. (Erichsen.)

Nearly as marked is the difference in mortality between operations done for injury, and those done for disease.

	Univers. Col. Hosp.		Malgaigne.		City Hospital.	
	Injury.	Disease.	Injury.	Disease.	Injury.	Disease.
Thigh.	.60	.19	.74	.61	.56	.27
Leg...	.18	.16	.63	.50	.32	.12

Were it possible, then, to have Civil Hospitals receive only pathological cases for amputation, we

should see a decrease in mortality of over 50 per cent. Traumatic cases, on the other hand, give the best results on the battle-field.

Unfortunately it happens, that the poor victims of accidental mutilation from steam-power, are as badly lacerated as those torn by shot and shell. They are brought to the Hospital, often after several hours of transportation, depressed in mind, collapsed by nervous shock, and exhausted by venous hemorrhage. The long muscles are twisted, stretched and crushed, so that their integrity of tissue is ruined far above the apparent seat of injury. Extravasation into the loose cellular interspaces often extends for many inches farther, and is not infrequently accompanied by emphysema. It can readily be conceived that these extravasated spots may become the future depots of suppuration. The skin suffers even more than the other soft parts, by stretching. No doubt the venous and arterial tunics may be damaged by the same process, and the sheaths of the minute nerves be pressed upon, or torn.

Bones are crushed; joints opened; the trunk of the body, or the head not infrequently strained, or bruised. The mental excitements of war, which sustain the soldier, are wanting here. The victim of an accident in civil life is surrounded by those who weep for and pity him; he is anxious about his family; he considers himself a ruined man.

It is ever to be borne in mind, also, that this sort of injuries occur among the poorer classes, those often in the habit of abusing alcohol, and perhaps

tainted with syphilis, or scrofula. It can hardly, then, be considered surprising that so severe an operation as the removal of nearly one-fourth of the whole body, by a primary amputation in the middle or upper third of the thigh, should be followed by a mortality of from 60 to 80 in the hundred.

The surgeon, unfortunately, has no alternative but to operate, since he cannot wait for suppuration and a secondary amputation without more than endangering life.

Primary amputation of the thigh for injury, then, will always remain one of the most serious operations in surgery; and unless in the exceptional circumstances of unusual constitutional vigor and in country air, must be followed by a large percentage of mortality.

We are not unmindful of the statistics which have recently been brought forward in Scotland to prove that all amputations show a much less ratio of deaths in private practice than in hospitals. We have no doubt of the truth of these statements. But we must bear in mind that many of the cases are from rural districts, and among a healthy peasantry; and, to render statistics reliable, it is very necessary that a careful classification of cases should be made into primary and secondary, traumatic and pathological.

In injuries of the leg, there being less immediate danger to life, more cases are amputated in the secondary stage. This reduces the mortality from 41 per cent primary, to about 30 per cent secondary.

Primary amputations at the shoulder joint have a large mortality with us, viz.: 66 per cent, because they followed injuries so violent and so high up as often to leave little but torn and bruised tissues of which to form flaps. In these cases, the secondary operations are 16 per cent less fatal than the primary; and in the only cases of disarticulation at the shoulder for disease, recovery was early and satisfactory.

There were no amputations at the elbow-joint, or the wrist. Many partial amputations of the hand, with excellent results; and numerous cases in which parts of the hand were preserved under very discouraging circumstances.

One lad, by the premature explosion of a pistol, had the palm of the hand torn up, and the articulation of the first metacarpal bone with the trapezium entirely laid open, so that the thumb laid over on the back of the hand, as on a loose hinge of skin and muscle, the thenar region being extensively lacerated. The fore-finger was amputated; the thumb was laid back in place, the joint became covered in, and the member united well to the hand. Two years later he was seen driving a team and holding his whip in the injured hand.

The two cases of disarticulation at the hip-joint terminated fatally. Both were done on children *in extremis*, and as the only alternative left. The thigh had been run over and crushed so high up, as to leave barely skin enough to cover the

socket. Both children showed good reaction, and survived until the second day. No blood was lost at the time of operation, as the abdominal aorta was perfectly controlled by digital pressure.

Unfortunately, the records are not sufficiently accurate to enable us to discriminate between amputations of the thigh in the lower, middle or upper third. Practically, however, it resulted that the bone was sawn in few cases below the middle, and often above.

Disarticulation at the knee was done twice; both times with a fatal result. Disarticulation at the ankle-joint (Syme's amputation) was not practised— no suitable case having occurred. But partial amputations of the foot (Chopart's, Lisfranc's or Hey's operations) were done *five* times. The mortality was large, viz.: 40 per cent — for reasons which we will detail, after giving a *resumé* of the cases.

Case 1. — *Injury of the foot. Lisfranc's operatoin followed by amputation.* — (Service of Dr. Cheever.) — Michael L., on the 18th of April, 1865, had a sheet of boiler iron fall on the dorsum of the foot, about an inch behind the base of the toes. The skin was lacerated and bruised; the first and second toes fractured, and the others badly contused. What, at first sight, appeared a comparatively trivial injury, in two days had run into erysipelas, and in four into gangrene of two toes, and sloughing across the line of the wound on the dorsum of the foot. He was treated at this period with egg-nogg,

beef-tea, and tinctura ferri muriatis in drachm doses; the foot kept moderately warm, and incisions made into the inflamed parts. The patient was of a peculiarly nervous, irritable and timorous organization, and evinced throughout much repugnance to any operative measures. A line of demarcation having defined the great and second toes, and the sloughing across the base of the others being superficial, on the 26th, a week after the injury, these two toes, and the heads of the corresponding metatarsal bones, were removed. In a few days it became evident that necrosis was taking place in the shafts of the amputated metatarsal bones, and during the succeeding four weeks the patient had several attacks of erysipelatous inflammation, and became considerably reduced, although during a part of this time he was able to sit up. Always opposed to any explorations, he was finally induced, on June 11th, to have something more done. Being very desirous to save all of the foot possible, I confined myself to removing three-fourths of an inch of dead bone from the first metatarsal, and some scales and spiculæ from the adjacent soft parts. It was evident that some more radical measure would have to be employed eventually, but it was thought proper to defer it until the patient should consider it and consent. In ten days, having meanwhile suffered more sloughing and constitutional irritation, he consented to *Lisfranc's operation*. This I did on June 21st, and found the articular surfaces and flap looking quite well. There was only moderate hemorrhage, and but for the

known irritability of the patient, it seemed to promise a good result. The sutures were removed in four days, and the ligatures came away in six. Union was moderately good over the top of the flap, but the pulse kept up high, and there was much irritation, which culminated on the 29th in another patch of erysipelas on the ankle and up the leg. The two depending portions of the incision began to discharge a dirty pus; the constitutional irritation increased day by day. Restless, painful nights were succeeded by despondent days. The complexion became straw-colored; the stomach irritable, alternating with diarrhœa.

July 5th.—An abscess was opened above the inner malleolus. Things went on from bad to worse, a probe passing through the stump from one side to the other; new abscesses collecting and burrowing, with a thin, sanious pus, and dead bone could be felt in various directions. After the strongest representations of his danger to himself and friends, the patient finally consented to amputation. It was done on July 23d, a month after Lisfranc's operation, the leg being removed midway between the knee and the ankle. Oval skin flaps were made in front and behind, and a circular section of the soft parts where the bones were sawed. These flaps came together without the slightest tension, and the ends of both bones were well obliqued and rounded with the saw and forceps. On examination of the stump, it was found thoroughly diseased in every articulation. The three cuneiform bones were spongy wedges of caries;

the cuboid and scaphoid were nearly as bad; the articulations of the astragalus and os calcis were likewise affected, and offensive pus was found in the ankle-joint, and even in the inferior articulation of the tibia and fibula. Commencing at Lisfranc's joint, every articular surface was successively riddled by disease. Subsequently to the amputation he went on well, notwithstanding his pain and irritability and a threatened protrusion of the tibia through the anterior flap, which danger was averted by slinging the stump on a tin splint. He was discharged, well, in four weeks; and it is worthy of remark that the erysipelas to which he was so subject, ceased as soon as the cause of irritation, the carious tarsus, was removed, showing that his recurring attacks were not due to any bad hygienic influences in the Hospital, although he was himself a standing focus of contagion to others.

Case 2. — *Crush of foot. Chopart's operation. Subsequent amputation.* — (Service of Dr. Cheever.) — June 24th, 1865. Thos. O'N., æt. 23, laborer; a moderate drinker; fair health. A gravel-car ran over metatarsus and phalanges of left foot, producing laceration of inner side of foot, and plantar aspect of toes, and fracturing two toes. Next day, first and second toes cold and blue; constitutional state irritable. Following day, three toes cold; great toe black and vesicated.

June 27th.—Line of demarcation forming on dorsum, two inches above base of toes. Does not com-

plain of much pain. Blush of erythema and red lines extending above ankle. Tarsus swollen and œdematous, but normal on plantar aspect. Very timid, irritable and depressed.

28th. — On consultation, *Chopart's operation* was advised, as affording a fair chance of success, and being as low down as it is safe to go. The operation found the articular surfaces healthy, but the flap looked poorly, the muscle being dark and congested, and the sheaths of the flexor tendons a little discolored with a yellow, semi-purulent look. These portions were dissected out. The tendo-Achillis was divided subcutaneously, and the flap brought up firmly by sutures and broad straps.

July 3d. — The ligatures had all come away; the flap was hitched on by granulations; he looks pretty promising, but the pulse has ranged from 100 to 136 for the week past. Stimulants and food freely given.

4th. — A little secondary hemorrhage. Spasmodic retention of urine. For the next fortnight a good deal of pain. No firm union. A little occasional hemorrhage. Generally running down.

22d. — Two counter openings for pus, which had burrowed up the leg, made beside either malleolus; a good deal of pus found. Pulse keeps very high. Much suffering. Failing.

July 26th, one month after the primary operation, a secondary amputation was performed — his consent having finally been obtained. Amputated at middle of leg by oval skin flaps. On examining the tarsus, very extensive disease was found, extending, as in

the other case, through all the articular surfaces to the ankle-joint.

Section of the tendo-Achillis found it firmly united by a granular material — strong and slightly elastic. One month since section.

During the following week, patient appeared relieved of a load. Some sloughing of flaps; a little necrosis coming on — but, on the whole, doing well, up to this date. He finally recovered.

Case 3. — *Injury of foot, followed by gangrene. Lisfranc's operation. Subsequent amputation. Death.* — (Service of Dr. Stedman.) — May 25th, 1865. George F., æt. 23, a native of Gibraltar, and a soldier. Six days ago had the great toe run over by a horse-car. Has now a dark, gangrenous-looking slough extending up nearly to the tarso-metatarsal articulation. General health fair.

May 28th. — Not so well. No appetite. Ordered ale.

June 2d. — Foot red and painful. ℞. Tinct. ferri mur., gtt. xxx., secundis hôris.

7th. — Slough extending. Operation deferred until limits are more defined.

14th. — Lisfranc's operation performed; but little hemorrhage.

16th. — Doing well. Not much constitutional disturbance.

19th. — A little sloughing on inner side of flap. Eight ounces of wine daily.

22d. — Diarrhœa.

25th. — Foot looking better under a chlorinated poultice.

28th, 29th and 30th. — Foot very much inflamed and painful. Aspect as of extensive disease of tarsus. Constitutionally failing. Diarrhœa at intervals. Hectic.

July 1st. — Leg amputated three inches above ankle by two oval flaps; parts look rather congested; but little blood lost.

6th. — Wound looks dark and sloughy. Free stimulation.

8th. — Very weak; no appetite; tongue dark; pulse 120; delirium; diarrhœa. Large slough separating.

12th. — Seems better since slough came away. Bones denuded for two inches; edges of wound granulating. Beef-tea, porter and rum.

15th. — Diarrhœa again.

17th. — Delirium; very prostrate.

23d. — At a consultation it was decided that he was too feeble to bear any removal of necrosed ends of bones.

30th. — Died — one month after the amputation; six weeks after the tarso-metatarsal amputation; two months since the injury was received.

Case 4. — *Inflamed bunion of great toe, followed by disease of metatarsal bones. Lisfranc's operation, good recovery.* — (Service of Dr. Stedman.) — March 22d, 1865. E. W. W., æt. 35, entered hospital for disease of metatarso-phalangeal joint of great toe —

an inflamed bunion having suppurated, opening the joint, and followed by necrosis. Great toe and head of metatarsal bone amputated to-day.

25th. — Wound healthy, but suppurating. Stimulants.

April 1st. — An abscess evacuated on instep.

11th. — Abscess formed and opened at junction of second and third toes.

22d. — Abscess formed in sole.

28th. — Dead bone found at second toe.

May 3d. — Foot examined under ether. Dead bone found as high as first row of tarsal bones, and involving several metatarsals. Wife would not consent to operation.

10th. — Lisfranc's operation done by Dr. Stedman.

June 6th. — Discharged well, four weeks after Lisfranc's operation. Has since been seen with a boot on, walking quite well.

Case 5. — *Gun-shot necrosis of os calcis and astragalus. Operation. Recovery.* — (Service of Dr. Cheever.) — July 28th, 1865. Daniel G., æt. 21, was wounded in the heel by a Minnié ball, before Petersburg, March 31st, 1865, four months ago. A piece of shattered bone worked out in two weeks. Has had four or five pieces removed since, without the use of the knife. Abscess formed and opened twice. Now, a sinus below insertion of tendo-Achillis, where dead bone can be felt. Hot and feverish; foot swollen and painful.

July 29th. — Patient very feverish this morning. Foot and ankle more swollen, red and glazed. Constitutional disturbance great. Aspect of foot so threatening as to suggest immediate interference, in order to save the member. A rectangular flap was made over the back of the heel. A large carious cavity was found in posterior part of os calcis. Much dead bone was gouged out. After this had been satisfactorily accomplished, it was found, to our regret, that a probe passed freely along the outer side of foot, to a point just below the outer malleolus. An incision was made the whole length of the director; pus escaped, and more dead bone was found. This was in the posterior and external calcaneo-astragaloid articulation, not communicating with the malleolar (fibular) joint. A segment, one-fourth of an inch in diameter, was gouged out of this cavity, embracing parts of both bones. Everything now appeared sound, except a superficial sinus running down into the sole. Here a free counter-opening was made. The wound was partially closed with silver sutures, and cold water applied. Beef-tea and opiates ordered.

30th. — Patient looks better. Less fever; appetite improving; less heat and swelling of foot.

August. 5th. — Has improved very fast. Wound filling up with granulations; only one small slough remains; no great suppuration.

19th to 22d. — Abscess formed and was discharged on outer side of foot.

25th. — About four weeks since operation. Sits up, and is doing extremely well. Wounds fast closing.

No bone to be felt. Foot getting natural in size. No fever. Appetite good. Every prospect of an excellent foot, where, one month ago, extensive caries of tarsus and ultimate amputation threatened.

No.	Name.	Age	Occupation.	Injury or Disease.	Operation.
1	Morris L. 1. 131.	23	Teamster.	Comp. and com. fract. elbow.	Amp. at joint, with flap from deltoid. (Primary.)
2	Thos. L. 1. 143.	17	Baker.	Comp. and com. fracture of humerus in shaft and into elbow joint.	Amp. at joint with flap from deltoid. (Primary.)
3	John R. 1. 245.	32	Printer.	Compound and com. fract. of humerus in shaft, and into elbow joint.	Amp. at joint with flap from deltoid. (Secondary.)
4	Jane T. 5. 74.	6		Compound fracture of humerus.	Amp. at joint with flap from deltoid. (Primary.)
5	John S. 5. 257.	40	Laborer.	Compound and com. fract. of humerus, with extensive bruising of arm. Railroad accident.	Amp. at joint by Larrey's method. (Primary.)
6	Edward K. 11. 26.	9		Comp. and com. fracture of humerus, by railroad accident.	Amputation by Larrey's method. (Primary.)
7	Conrad R. 10. 267.	34	Laborer.	Compound and com. fract. of humerus, and of ulna and radius. Railroad accident.	Amputation by Larrey's method. (Primary.)
8	James K. 13. 252.	18	Laborer.	Medullary cancer of humerus.	Amputation by Larrey's method. Primary.
9	Georgio R. 20. 15.	34	Bar-tender.	Compound and com. fract. of humerus into elbow joint.	Larrey's method 25 days after injury, and resection of elbow.
10	Richard N. 20. 211.	17	Mechanic.	Comp and com. fract. of humerus. Severe laceration.	Larrey's method. (Primary.)
11	John D. F. 21. 92.	25	Paper hanger.	Compound and com. fract. of humerus.	Deltoid flap. (Primary.)

Result.	Complications.	Operator.	Remarks.
Death 20 hours.	Fract. humerus and tibia and fibula.	Dr. Thaxter.	Death from shock and exhaustion.
Recovery 89 days.	Lacerated scalp wound. Phagedæna of flaps.	Dr. Thaxter.	The patient was in a condition of great collapse at the time of the operation, and the hemorrhage was considerable, the soft parts about the shoulder being extensively bruised.
Death 6 hours.	Delirium tremens; gangrene.	Dr. Thaxter.	The whole limb was extensively bruised. Amputation was performed on the 6th day, the patient being in a low condition.
Death 3 days.	Comp. and com. fract. lower jaw.	Dr. Thaxter.	The fracture of the jaw required the removal of the greater part of the body of the bone. There was no well marked reaction, the decline being progressive.
Recovery 42 days.		Dr. Buckingham.	
Death 13 days.	Diarrhœa, chills, vomiting and other symptoms of pyæmia.	Dr. Cheever.	"Right lung much disorganized. Large abscess in thigh."
Death before recovery from ether.	Comp. and com. fract. tibia and fibula, and of femur, necessitating amputation of thigh.	Dr. Homans.	
Recovery 53 days.		Dr. Cheever.	The tumor was situated originally at insertion of the deltoid, and at the operation had involved the lower three-fourths.
Recovery 56 days.		Dr. Ropes.	
Death 24 hours.	Comp. and com. fract. tibia and fibula. Extreme shock.	Dr. Homans.	Death from collapse.
Death 11 days.	Secondary hemorrhage.	Dr. Cheever.	Death from repeated attacks of secondary hemorrhage.

Recapitulation.

Recovered, 4; (Primary, 3; Secondary, 1.)
Died, 7; (Primary, 6; Secondary, 1.)
Ratio of mortality, 63 per cent.
Average duration of convalescence, 60 days.
Traumatic, 10; Idiopathic, 1.

No.	Name.	Age	Occupation.	Disease.	Operation.
1	Lizzie C. 1. 167.	17	Waitress.	Comp. disloc. elbow.	Amputation, lower third of arm, by circular method. (Secondary.)
2	John H. A. 1. 9.	34	Seaman.	Amp. of forearm by machinery.	Amp. arm, in middle third (primary), antero-posterior flaps.
3	Joseph B. 1. 73.	58	Baker.	Necrosis, elbow joint, with anchylosis.	Amp. in middle third, circular.
4	Peter W. 1. 135.	6	Miner.	Comp. and com. fract. of humerus into elbow.	Amp. in upper third (primary), by circular method.
5	Patrick L. 4. 181.	30	Rope-maker.	Fract. of humerus, with extensive bruises.	Amp. in middle third, circular. (Primary.)
6	Charles D. C. 2. 169.	27	Machinist.	Necrosis of ulna and radius.	Amp. in lower third, circular.
7	David F. C. 7. 94.	33	Laborer.	Secondary hemorrhage.	Amp. in upper third, antero-posterior flaps.
8	Frank G. 8. 31.	36	Merchant.	Severe lacerated wound of forearm, with comp. and com. fract. of both bones.	Amp. in lower third, circular. (Primary.)
9	William W. 8. 110.	28	Artist.	Comp. fract. of humerus into elbow-joint.	Amp. in middle third, antero-posterior flaps. (Secondary.)
10	Henry A. G. 10. 33.	45		Comp. and com. fract. of humerus.	Amp. in upper third, antero-posterior flaps. (Primary.)
11	Lyman I. 11. 137.	57	Laborer.	Lacerated wound of hand, by circular saw, opening carpus and dividing ulnar artery.	Amp. in middle third, double flap. (Secondary.)
12	Katie H. 11. 115.	15		Primarily, caries of elbow; secondarily, excision of joint.	Amp. in upper third, double flaps.
13	William H. L. 12. 152.	48	Weaver.	Caries of carpus, followed by amp. of forearm.	Amp. in middle third, circular.
14	Mary C. 12. 66.	38		Palmar abscess, followed by necrosis of carpus, ulna and radius.	Amp. in middle third, double flaps.

Result.	Complications.	Operator.	Remarks.
Death 192 hours.	Pyæmia; bed sores.	Dr. Cheever.	Operation two weeks after injury.
Recovery 52 days.	Diarrhœa; repeated abscesses of stump.	Dr. Buckingham.	
Recovery 30 days.	Bronchitis.	Dr. Cheever.	
Recovery 105 days.	Slight phagedæna of stump.	Dr. Thaxter.	
Recovery 81 days.	Secondary hemorrhage; and at the time of injury, comp. and com. fract. of ulna and radius.	Dr. Cheever.	Three attacks of secondary hemorrhage, arrested by tourniquet pressure.
Recovery 41 days.		Dr. Coolidge.	The necrosis followed amputation of fore arm for an injury, and extended nearly to the elbow-joint.
Unknown. Patient discharged at his own request, 27 days after the operation, and before convalescence was fully established.	Rigors and modified symptoms of pyæmia.	Dr. Cheever.	The patient had been stabbed in the flexure of the elbow, and the brachial artery was partly severed. The main vessel was ligated in the middle third before his entrance to Hospital. Secondary hemorrhage developed in the wound at the elbow seven days after the injury, and continued to such extent that amputation was necessary; attempts to secure vessels *in situ* being ineffectual. The patient's general condition was poor.
Recovery 35 days.		Dr. Homans.	
Death 3 days.	Delirium tremens. Dislocation of shoulder.	Dr. Coolidge.	Injury caused by a fall down a flight of stairs, fracturing ulna and radius into wrist, humerus into elbow, and severely bruising the soft tissues. The patient much depressed.
Death 48 hours.	Comp. and com. fract. opposite humerus in elbow, with extensive contusions.	Dr. Stedman.	Death from collapse. No full reaction.
Death 10 days.	Erysipelas. Pyæmia.	Dr. Cheever.	Death from pyæmia. Arm in very unfavorable condition before operation.
Recovery 71 days.		Dr. Cheever.	The operation followed excision after an interval of 16 days, the patient being in poor condition from prolonged suppuration.
Death 38 days.	Phagedæna of stump. Pyæmia.	Dr. Buckingham.	Patient in poor condition from outset.
Recovery 39 days.	Phagedæna of stump.	Dr. Buckingham.	Abscess of palm neglected before entrance to Hospital. Incisions and partial removal of necrosis; ended in amputation.

(*Continued.*)

No.	Name.	Age	Occupation.	Injury or Disease.	Operation.
15	Annie S. A. 14. 3.	16	Torpedo-maker.	Hand blown off by exploded powder.	Amp. in lower third, double skin flaps. (Primary.)
16	Daniel B. 14. 34.	49	Laborer.	Comp. and com. fract. of humerus.	Amp. in upper third, circular. (Primary.)
17	Dennis K.	5		Comp. and com. fract. carpus, with severe laceration of forearm.	Amp. in middle third; antero-posterior flaps. (Primary.)
18	Ellen W. 17. 275.	12		Comp. fract. of inner condyle of humerus, with severe laceration.	Amp. in middle third; circular. (Secondary.)
19	John O'C. 19. 44.	30	Painter.	Comp. and com. fract. humerus. Railroad accident. extensive laceration.	Amp. in upper third; antero-posterior flaps.
20	George D. 19. 196.	45	Station master.	Comp. and com. fract. ulna, radius and humerus. Railroad accident.	Amp. in upper third, double flaps. (Primary.)
21	D. D. F., 20. 156.	47	Cabinet maker.	Saw accident, opening elbow joint, by section of olecranon.	Amp. in upper third; circular. (Secondary.)
22	Henry E. S. 21. 40.	27	Driver.	Comp. and com. fract. of humerus.	Amp. in upper third. (Primary.)
23	James N. 22. 1.	31	Painter.	Comp. and com. fract. of ulna and humerus into elbow.	Amp. in upper third; circular. (Primary.)
24	Edward B. 20. 230.	9		Comp. com. fract. of humerus.	Amp. in upper third. (Primary.)
25	Robert C. 24. 82.	28	Printer.	Comp. com. fract. into elbow.	Amp. in middle third; circular. (Secondary.)
26	Sarah H. 24. 88.	44	Domestic.	Comp. com. fract. of ulna and radius.	Amp. in middle third; circular. (Secondary.)
27	Jonathan P. 24. 130.	42	Teamster.	Comp. com. fract. of ulna and radius.	Amp. in middle third; circular. (Secondary.)

(*Continued.*)

Result.	Complications.	Operator.	Remarks.
Recovery 24 days.	Severe lacerated wounds of face and chest, with burn of opposite hand, and penetrating wound of upper maxilla, eye-ball extirpated.	Dr. Buckingham.	Perfect recovery.
Death 7 days.		Dr. Buckingham.	Death probably from pyæmia.
Recovery 52 days.		Dr. Buckingham.	
Recovery 43 days.		Dr. Thaxter.	Amp. performed when the joint had become carious, and the external wound was gangrenous.
Recovery 69 days.	Erysipelas.	Dr. Thaxter.	
Death 8 days.	Secondary hemorrhage.	Dr. Homans.	Death from gradual and progressive exhaustion.
Recovery (partial), 19 days.		Dr. Thaxter.	Amp. performed 15 days after primary re-section of elbow joint.
Recovery 27 days.	Delirium tremens.	Dr. Cheever.	
Recovery 38 days.	Phagedæna of stump.	Dr. Homans.	
Recovery 28 days.		Dr. Homans.	
Death 31 days.	Pyæmia.	Dr. Ropes.	
Death 22 days.	Pyæmia.	Dr. Ropes.	
Death 25 days.	Pyæmia, delirium tremens.	Dr. Ropes.	

Recapitulation.

Recovered, 16; (Pri. 9; Sec. 2; path. 5.)
Died, 10; (Pri. 3; Sec. 6; path. 1.)
Ratio of mortality, 38 per cent.
Average convalescence, 43 days.

No.	Name.	Age	Occupation.	Injury or Disease.	Operation.
1	Richard M. 3. 231.	28	Engineer.	Lacerated wound of thumb and forefinger, with farcture of metacarpal bones. Subsequent gangrene.	Amp. in lower third, with antero-posterior flaps. (Secondary.)
2	Warren B. 2. 87.	40	Engineer.	Comp. and com. fract. of metacarpus, the hand being crushed by machinery.	Amp. in middle third; antero-posterior flaps. (Primary).
3	Joseph C. 2. 214.	49	Mason.	Comp. dislocation of wrist.	Amp. in middle third; antero-posterior flaps. (Primary.)
4	Myron L. S. 2. 255.	45	Carpenter.	Circular saw lacerated wound of forearm, with comminution of ulna.	Amputation in upper third; antero-posterior flaps. (Primary.)
5	Patrick M. 5. 54.	9		Comp. and com. fract. of carpus and radius.	Amp. in upper third; antero-posterior flaps. (Primary.)
6	Michael H. 7. 254.	11		Circular saw amputation just above wrist.	Amp. in middle third; antero-posterior flaps. (Primary.)
7	John M. 8. 154.	50	Laborer.	Palmar abscess, caries of carpus.	Amp. in upper third; circular.
8	Augustus T. 10. 137.	11		Comp. and com. fract. of bones of hand, with laceration by cog-wheels.	Amp. in lower third. Primary.
9	William H. L. 12. 152.	48	Weaver.	Caries of carpus.	Amp. at middle third; double flaps.
10	Dennis P. 13. 92.	15		Comp. and com. fract. of bones of hand by machinery.	Amp. in lower third; double flaps. (Primary.)
11	John F. 14. 2.	29	Shoemaker.	Necrosis of carpus and metacarpus; idiopathic.	Amp. in middle third.
12	Michael R. 17. 41.	51	Cutler.	Chronic ulceration of hand.	Amp. in lower third; skin flaps.
13	Betsey W. 19. 136.	68		Caries of carpus, four years.	Amp. in lower third; antero-posterior skin flaps.
14	Matthew H. 19. 165.	35	Laborer.	Palmar abscess, from bite; caries of carpus.	Amp. in lower third; skin flaps.
15	Joseph G. 20. 271.	12		Comp. fract. of ulna and radius.	Amp. in lower third; circular. (Primary.)
16	George A. P. 22. 26.	26	Engineer.	Comp. and com. fract. of fingers and metacarpus.	Amp. in upper third; circular. (Primary.)
17	Felix P. 24. 27.	30	Carpenter.	Comp. fract. of ulua and radius.	Amp. in upper third; secondary.

Result.	Complications.	Operator.	Remarks.
Recovery in 26 days.	Necrosis.	Dr. Cheever.	
Recovered 36 days	Slight phagedæna of flaps.	Dr. Homans.	
Recovery 60 days.	Fracture of three ribs.	Dr. Stedman.	
Recovery 47 days.		Dr. Homans.	
Recovery 91 days.		Dr. Thaxter.	
Cure progressing well at end 21 d'ys. Remo'd from Hos. by friends-	Necrosis of ulna.	Dr. Thaxter.	
Recovery 73 days.		Dr. Coolidge.	The primary disease was a palmar abscess, which, through neglect, had developed before his entrance to Hospital, so that free incisions did not prevent caries and the burrowing of pus along the flexor tendons of the forearm.
Recovery 32 days.		Dr. Thaxter.	
Amp. of arm after 2 mos. Death, 98 days.	Phagedæna of stump. Pyæmia.	Dr. Coolidge.	Patient in low constitutional condition from the outset.
Recovery 22 days.		Dr. Thaxter.	
Death 19 days.	Pyæmia.	Dr. Buckingham.	Death from pyæmia.
Recovery 31 days.		Dr. Derby.	
Recovery 38 days.		Dr. Thaxter.	
Recovery 22 days.		Dr. Homans.	Before the operation, the abscess in the hand had developed to an extreme degree, in spite of free incisions. It was found necessary to ligate the ulnar artery after one of these incisions, on account of hemorrhage from the wound.
Recovery 42 days.	Erysipelas.	Dr. Homans.	
Recovery 23 days.		Dr. Homans.	
Recovery 28 days.	Fract. of ribs. Dislocated hip.	Dr. Ropes.	

RECAPITULATION.

Recovered, 15; Primary, 9; Secondary, 2; Path, 4.
Died, 2; " 0; " 0; " 2.
Ratio of mortality, 12 per cent.
Average convalescence, 40 days.

No.	Name.	Age	Occupation.	Injury or Disease.	Operation.
1	Richard H. C. S. 156.	8		Severe lacerated wound of thigh with amputation of leg in upper third, by rail-road injury.	Amputation at joint; flap taken from gluteal region, by incisions from outside inwards.
2	Elbridge L. A. 22. 84.	3		Severe lacerated wound of thigh, the soft parts being torn down to the femur.	Amputation with the anterior and posterior flaps.

Result.	Complications.	Operator.	Remarks.
Death 27 hours.		Dr. Coolidge.	The soft tissues were torn from the outside aspect of the thigh, from the great trochanter to the knee, and the leg was severed entirely in its upper third. Death from collapse.
Death 36 hours.		Dr. Thorndike.	Death from collapse.

Recapitulation.

Recovered, 0.

Died, 2. Primary, 2; Secondary, 0.

Ratio of mortality, 100 per cent.

No.	Name.	Age	Occupation.	Disease or Injury.	Operation.
1	Mary A. C. 1. 89.	34	Domestic.	Chron. arthritis of knee.	Amputation of thigh by circular method.
2	Mary I. N. 1. 215.	5	Minor.	Caries of knee.	Amputation of thigh in middle third; circular.
3	Thos. O. 1. 165.	23	Laborer.	Severe comp. and com. fract. tibia and fibula.	Amp. in lower third; circular. (Primary.)
4	Abner T. 1. 207.	27	R. R. laborer.	Comp. and com. fract. tibia and fibula.	Amp. in lower third; circular. (Primary.)
5	George W. 1. 237.	26	Machinist.	Comp. and com. fract. of tibia and fibula, by machinery.	Amp. in lower third. Primary.
6	William R. 1. 271.	25	Laborer.	Caries of knees.	Amp. in lower third, by double flaps.
7	William H. C. 3. 69.	16	Soldier.	Comp. and com. fract. of tibia and fibula. Railroad injury.	Amp. in lower third, by double flaps. (Primary.)
8	Matthew F. 3. 203.	19	Laborer.	Caries of knee.	Amp. in lower third, by double flaps.
9	Thomas F. 2. 7.	21	Soldier.	Neuroma from gunshot wound.	Amp. in middle third; circular. (Secondary.)
10	John D. 2. 77.	70	Laborer.	Comp. fract. of femur.	Amp. in lower third; circular. (Primary.)
11	Robert M.	10		Amp. of leg by railroad injury.	Amp. in middle third; circular. (Primary.)
12	Roderick D. 2. 173.	11		Caries of knee and tarsus.	Amp. in middle third; circular.
13	William A. H. 2. 225.	28	Carpenter.	Gunshot wound of foot. Caries.	Amp. in middle third; circular. (Secondary.)

Result.	Complications.	Operator.	Remarks.
Recovery 79 days.		Dr. Cheever.	Operation performed four months after excision of knee, the patient being much debilitated.
Recovery 26 days.		Dr. Thaxter.	
Recovery 141 days.	Profuse diaphoresis. Necrosis, Hydrocele, and its radical cure. Resection of end of femur.	Dr. Thaxter.	The necrosis and phagedæna of the stump protruded to such extent that it was found necessary to open the flaps three months after the amputation, and the end of the femur was resected.
Recovery 11 mos.	Delirium tremens. Bed sores, necrosis; and primarily comp. and com. fract. of opposite tarsus, requiring amp. of leg.	Dr. Thaxter.	The necrosis of the femur required opening the stump and free removal of the dead fragments. The opposite tibia and fibula required a similar operation.
Death 30 days.	Delirium tremens, erysipelas, bed sores. Pyæmia.	Dr. Thaxter.	Progressive exhaustion and decline from the operation.
Recovery 70 days.		Dr. Buckingham.	Excision of the knee joint was attempted, but the profuse hemorrhage from the cut surface of the bones made amputation necessary.
Death 1 hour.	Comp. and com. fract. opposite tibia and fibula.	Dr. Buckingham.	Death from shock without any attempt at reaction, and before recovery from etherization.
Death 69 days.	Necrosis. Phthisis, and general exhaustion.	Dr. Cheever.	The patient was extremely debilitated at the outset, and failed progressively.
Recovery 56 days.		Dr. Stedman.	The patient had suffered very great pain in the injured limb, especially marked in the foot. The foot was flexed and very tender. Partial relief was obtained from morphia, subcutaneously. The course of the bullet in the neighborhood of the sciatic nerve, was marked by a firm fibrinous cicatrix, with adhesion of the adjacent tissues. The nerve itself was enlarged to "one and a half" its proper size and was somewhat hardened.
Death 3 hours.		Dr. Homans.	Death from shock.
Death 30 hours.	Fract. of ulna and radius, and of opposite femur. Intermediate hemorrhage, convulsions.	Dr. Homans.	No full reaction.
Recovery 46 days.	Secondary hemorrhage.	Dr. Coolidge.	
Death 6 hours.		Dr. Buckingham.	Death from shock. The soft tissues of the leg were found extensively infiltrated with pus necessitating high amputation.

(*Continued.*)

No.	Name.	Age	Occupation.	Disease or Injury.	Operation.
14	Elizabeth T. 5. 218.	47		Compound and commin. fracture of fibula; commin. fracture of tibia.	Amp. through condyles, circular (secondary).
15	John O. 5. 213.	21	Shoemaker.	Necrosis of tibia.	Amp. in lower third by antero-posterior flaps.
16	Patrick McQ. 5. 127.	17	Laborer.	Traumatic synovitis of knee, with subsequent necrosis of femur.	Amp. by antero-posterior flaps in upper third.
17	Charles P. 9. 156.	16		Caries of knee, six years.	Amp. by double flaps, middle third.
18	L. N. K. 9. 186.	21	Soldier.	Necrosis of stump of thigh two and a half years after amp. for gunshot wound.	Amp. in middle third., circular.
19	Ellen S. 9. 272.	23	Domestic.	Exten. lacera'n of thigh with fract. of external condyle of femur into knee.	Amp. in upper third, lateral flaps (primary).
20	Conrad R. 10. 267.	34	Laborer.	Comp. and com. fract. of femur and of tibia and fibula into knee. Railroad injury.	Amp. in middle third., double flaps (primary).
21	Fred'k C. P. 11. 238.	29	Merchant.	Comp. and com. fract. of tibia and fibula.	Amp. in lower third, lateral flaps (primary).
22	John C. 12. 116.	25	Laborer.	Comp. and com. fract. tibia and of bones of foot, with exterior laceration.	Amp. in lower third, circular (secondary).
23	Theodore M. 12. 113.	22	Carpenter.	Diffuse suppuration of leg and thigh; dislocation backwards of tibia; necrosis of femur.	Amp. in upper third.
24	Nunz. M. 14. 36.	39	Gardener.	Comp. and com. fract. of tibia and fibula. Railroad accident.	Amp. in lower third, lateral flaps (primary).
25	Abraham H. 14. 58.	21	Fireman.	Comp. and com. fract. femur.	Amp. in lower third, double flaps (primary).

(*Continued.*)

Result.	Complications.	Operator.	Remarks.
Incomplete recovery after 201 days.	Diarrhœa; great exhaustion.	Dr. Buckingham.	Amputation was performed 118 days after the injury, all temporizing treatment in the interval having failed. The leg at the time of the operation was gangrenous. When the stump had nearly healed, a peculiar painful swelling in the shaft of the bone distorted it in a marked degree from the normal line, and at one point absorption seemed to have taken place completely through the bone. The precise nature of the lesion was not determined.
Recovery 175 days.	Phagedæna of flaps.	Dr. Cheever.	The necrosis was first renewed by gouging, but the wound became gangrenous, and amputation was done 49 days after the primary operation.
Recovery 44 days.		Dr. Cheever.	Amputation was performed 28 days after the receipt of the injury, the patient in the interval having become much debilitated by profuse suppuration.
Recovery 55 days.	Second'y hemorrhage from medulla of femur	Dr. Thorndike.	The leg was fixed at a right angle with thigh and was anchylosed and useless; partial dislocation of tibia backwards.
Recovery 27 days.		Dr. Thorndike.	The necrosis involved the tibia extensively, and the knee was anchylosed.
Death 6 days.		Dr. Thorndike.	Death from exhaustion.
Death before recovery from either.	Comp. and com. fract. of humerus, ulna, and radius, requiring amp. at shoulder.	Dr. Homans.	
Recovery 34 days.		Dr. Cheever.	
Recovery 129 days.	Repeated abscesses, with night sweats and chills.	Dr. Coolidge.	An attempt was made to save the leg at the outset by removing the comminuted fragments and partial resection; this failing, after 8 days, amputation was performed.
Death 10 days.		Dr. Buckingham.	Death from exhaustion.
Death 20 days.	Pyæmia.	Dr. Cheever.	
Death 36 hours.	Crush of opposite foot.	Dr. Buckingham.	Death from collapse.

(*Continued.*)

No.	Name.	Age	Occupation.	Injury or Disease.	Operation.
26	Thomas D. 14. 180.	14		Comp. and com. fracture tibia and fibula. Railroad accident.	Amp. in lower third; circular. (Primary.)
27	John D. 16. 121.	25	Sailor.	Caries of ankle and knee.	Amp. lower third; circular.
28	Moody K. S. 17. 10.	37	Foreman.	Compound fract. of femur into knee.	Amp. in middle third; circular. (Primary.)
29	Patrick M. 17. 169.	43	Shoemaker.	Extensive caries of knee.	Amp. in lower third; circular.
30	Dennis Mc. 17. 267.	43	Grocer.	Chronic syphilitic ulcer of leg.	Amp. lower third; antero-posterior skin flaps.
31	Frank B. 18. 204.	9		Comp. fract. femur with extensive laceration of thigh.	Amp. in upper third; circular. (Primary.)
32	James McJ. 18. 31.	35	Shoemaker.	Comp. fracture of tibia and fibula.	Amp. in lower third; circular. (Secondary.)
33	James F. D. 18. 240.	27	Teamster.	Comp. and com. fract. of tibia.	Amp. in lower third; circular. (Secondary.)
34	Peter C. 18. 242.	47	Painter.	Comp. and com. fract. tibia and fibula.	Amp. in lower third; circular. (Primary.)
35	Bridget Mc. 21. 171.	22	Tailoress.	Caries of knee sixteen years.	Amp. in lower third; circular.
36	Ambrose L. 22. 242.	63	Merchant.	Comp. and com. fract. of tibia and fibula.	Amp. in lower third; circular. (Primary.)
37	James H. 24. 16.	57	Laborer.	Comp. and com. fract. of tibia and fibula. Railroad accident.	Amp. in lower third; circular. (Primary.)
38	Patrick B. 23. 32.	27	Teamster.	Gangrene of foot following comp. fract. of leg.	Amp. in middle third; circular. (Primary)
39	Joseph L. 23. 38.	35	Merchant.	Comp. com. fract. of tibia and fibula into knee.	Amp. in lower third; circular. (Primary.)
40	Wesley V. 23. 36.	38	Laborer.	Chron. caries of knee joint	Amp in middle third; circular.
1	Thomas N. 24. 84.	34	Ostler.	Incised wound of knee opening joint.	Amp. in middle third; circular. (Secondary.

(*Continued.*)

Result.	Complications.	Operator.	Remarks.
Death 27 days.	Irritation from pyæmia.	Dr. Homans.	
Recovery 49 days.		Dr. Thorndike.	
Death 48 hours.	Extreme shock. Contusion.	Dr. Derby.	Death from collapse.
Death 5 days.	Pyæmia.	Dr. Derby.	Patient in a very depressed condition, and of intemperate habits.
Recovery 64 days.		Dr. Derby.	Recovery hindered by retention of ligature in sheath of femoral artery.
Death 8 hours.		Dr. Ropes.	Death from shock.
Death 9 days.	Diarrhæa. Extreme depression. Gangrene.	Dr. Ropes.	Death from exhaustion.
Recovery 61 days.	Lacerated wound of opposite foot.	Dr. Ropes.	
Death 3 days.	Extreme shock.	Dr. Ropes.	Death from collapse.
Recovery 59 days.	Dyspepsia.	Dr. Cheever.	
Death 48 hours.	Extreme shock.	Dr. Cheever.	Death from collapse.
Death 4 days.		Dr. Thorndike.	Progressive collapse.
Death 16½ days.	Shock and pyæmia.	Dr. Derby.	
Death 35 days.	Pyæmia.	Dr. Derby.	
Death 39 days.	Pyæmia, syphilis.	Dr. Derby.	
Recovery 35 days.	Diarrhœa.	Dr. Ropes.	

Recapitulation.

Recovered, 18; Pri. 3; Sec. 4; Path. 11.
Died, 22; Pri. 15; Sec. 3; path. 4.
Ratio of mortality, 56 per cent.
Average convalescence, 91 days.

No.	Name.	Age	Occupation.	Injury or Disease.	Operation.
1	Michael D. 1. 29.	11	Minor.	Comp. and com. fracture of tibia and fibula.	Amp. middle third (primary)with skin flaps.
2	Anthony D. 1. 161.	30	Laborer.	Comp. and com. fracture tarsus and metatarsus. Subsequent gangrene.	Amp. in lower third, circular. (Secondary.)
3	Cornelius D. 1. 187.		Seaman.	Comp. and com. fracture of tarsus.	Amp. in lower third, circular. (Primary.
4	Abner T. 1. 207.	27	Laborer.	Comp. and com. fracture of tarsus.	Amp. in lower third, circular. (Primary.)
5	William H. C. 3. 69.	16	Soldier.	Comp. and com. fracture of tibia and fibula.	Amp. in upper third, by double flaps. (Primary.)
6	Daniel C. L. 3. 179.	38	Soldier.	Irritable stump.	Re-amputation.
7	Michael L. 3. 226.	43	Driller.	Gangrene of foot from injury.	Amp. in lower third. (Secondary.)
8	James O'N. 3. 227.	23	Laborer.	Gangrene of foot following injury. Caries of tarsus.	Amp. in middle third, by double flaps. (Secondary.)
9	Michael McM. 2. 15.	10	Laborer.	Comp. and com. fracture of metatarsus.	Amp. upper third, antero-posterior flaps. Primary.)
10	William G. 2. 67.	69	Machinist.	Comp. and com. fracture of tibia and fibula.	Amp. in middle third, skin flaps. (Secondary.)
11	George T. 2. 206.	23	Soldier.	Gangrene following injury and amputation of foot.	Amp. in lower third, antero-posterior flaps. (Secondary.)
12	John C. 5. 57.	43	Laborer.	Gangrene of foot following lacerated wound. Caries of tarsus.	Amp. in lower third, antero posterior flaps. (Secondary.)
13	Theodore K. 5. 187.	31	Baker.	Frost-bite of foot, with subsequent gangrene.	Amp. in lower third, antero-posterior flaps.
14	Patrick McQ. 7. 154.	30	Laborer.	Necrosis of stump of femur two years after amputation.	Re-amputation in upper third, by autero-posterior skin flaps.
15	Hilman F. 7. 220.	35	Seaman.	Caries of tarsus eight months.	Amp. in middle third; antero-posterior flaps.
16	John B. 8. 15.	45	Laborer.	Necrosis of tarsus.	Amp. in upper third, antero-posterior flaps
17	Richard D. 8. 57.	45	Laborer.	Comp. and com. fracture of tarsus; fract of tibia and fibula. Railroad accident.	Amp. in middle third, antero-posterior flaps. (Primary.)

Result.	Complications.	Operator.	Remarks.
Recovery 24 days.		Dr. Cheever.	
Recovery 226 days.	Lacerated scalp-wound. Contusions of back. Secondary. Obstinate ulceration of stump, with necrosis, requiring operation.	Dr. Thaxter.	The patient was in low condition at entrance, and his habits were intemperate. This primary recovery was good, but he persisted in falling down and injuring the stump.
Recovery 93 days.	Delirium tremens. Slight phagedæna of stump. Necrosis.	Dr. Cheever.	Habits intemperate, and general condition bad.
Recovery 11 months.	Delirium tremens. Bed sores. Necrosis. Primarily. Comp. and com. fract. of opposite tibia and fibula requiring amp. of thigh.	Dr. Thaxter.	The necrosis required incisions for the removal of the dead fragments. The opposite femur was also operated on similarly.
Death 1 hour.	Comp. and com. fract. opposite tibia and fibula.	Dr. Buckingham.	Death from shock, and before recovery from etherization.
Recovery 106 days.	Phagedæna of stump. Necrosis.	Dr. Cheever.	
Recovery 32 days.		Dr. Cheever.	Following Lisfranc's amputation of foot.
Recovery 84 days.	Phthisis.	Dr. Cheever.	Following Chopart's operation, after injury to metal tarsus.
Recovery 96 days.	Fract. of femur of same side.	Dr. Stedman.	Recovery from the fracture and from the amputation progressive and complete.
Recovery 153 days.	Slight necrosis. Limited phagedæna of flaps.	Dr. Homans.	Amputation performed nineteen days after receipt of injury.
Death 30 days.	Continued gangrene.	Dr. Buckingham.	Primary injury, a lacerated wound of dorsum of foot. Hey's amputation performed 19 days, and amputation of leg 35 days after injury. Death from exhaustion.
Recovery 69 days.	Severe bruises of thigh. Slight necrosis.	Dr. Buckingham.	Operation performed 17 days after injury, the patient's condition being very debilitated.
Recovery 48 days.		Dr. Buckingham.	Amputation was delayed until the line of demarcation was fully determined
Recovery 53 days after operation.		Dr. Cheever.	
Recovery 66 days.	Necrosis.	Dr. Thaxter.	
Death 10 days.	Secondary hemorrhage.	Dr. Homans.	Necrosis of first metatarsal bone and adjacent phalnx, required amputation of great toe. The disease extended, and the soft parts became gangrenous. Patient's condition low.
Recovery 187 days.	Phagedæna of flaps. Prolonged ulceration of stump.	Dr. Homans.	

(*Continued.*)

No.	Name.	Age	Occupation.	Injury or Disease.	Operation.
18	Anne F. 8. 120.	40	Domestic.	Comp. fracture tibia and fibula into ankle.	Amp. at knee-joint. (Secondary.)
19	Elias W. 9. 8.	52	Quarry foreman.	Both feet crushed off at ankle-joint, by large stone.	Double amp. in middle third; antero-posterior skin flaps. (Primary.)
20	George H. 10. 192.	45	Sailor.	Comp. and com. fract. tarsus and of tibia and fibula.	Amp. in middle third; antero-posterior flaps. (Primary.)
21	David O'K. 11. 65.	47	Shoemaker.	Comp. fract. of tibia.	Amp. in middle third; the flaps being marked out after Nathan Smith's method. (Primary.)
22	John H. 11. 75.	3		Comp. and com. fract. bones of foot.	Amp. in lower third; the oval flaps being marked out as above. (Primary.)
23	James McN. 11. 264.	34	Plumber.	Comp. and com. fract. tibia and fibula into ankle-joint.	Amp. in upper third; antero-posterior flaps. (Primary.)
24	John K. 12. 248.	30	Laborer.	Comp. and com. fract. tibia and fibula.	Amp. at knee-joint; the articular surfaces of femur being sawed. (Primary.)
25	Patrick H. 12. 267.	37	Laborer.	Chronic syphilitic ulceration of foot, with anchylosis of ankle.	Amp. in middle third.
26	Ellen S. 14. 164.		Domestic.	Comp. and com. fract. tibia and fibula.	Amp. in middle third; antero-posterior flaps. (Primary.)
27	Daniel G. 17. 183.	53	Peddler.	Comp. and com. fract. tarsus. Railroad accident.	Amp. in middle third; antero-posterior flaps. (Primary.)
28	Thomas N. 20. 49.	23	Clerk.	Comp. and com. fract. tibia and fibula. Railroad accident.	Amp. in middle third; double flaps. (Primary.)
29	Edward D. 20. 71.	26	Servant.	Caries of tarsus.	Amp. in lower third; double flaps.
30	Frank McK. 20. 194.	25	Cook.	Comp and com. fract. tibia and fibula into ankle.	Amp. in upper third; circular. (Primary.)
31	Patrick G. 21. 25.	46	Carpenter.	Comp. and com. fract. tibia and fibula into ankle.	Amp. in lower third; double flaps. (Secondary.)
32	Margaret B. 21. 216.	40		Comp. and com. fract. tibia and fibula into ankle.	Amp. in middle third. (Secondary.)
33	William K. 22. 118.	50	Carpenter.	Epithelial cancer of heel.	Amp. in middle third; circular.
34	Caleb B. 23. 9.	40	Laborer.	Comp. and com. fract. tib. and fib. R. R. accident.	Amp. in middle third; double flaps. (Primary).

RECAPITULATION.

Recovered, 23; Pri., 10; Sec., 6; Path., 7.
Died, 11; " 7; " 3; " 1.

(*Continued.*)

Result.	Complications.	Operator.	Remarks.
Death 10 days.	Alcoholism. Phagedæna of stump.	Dr. Coolidge.	Patient refused primary amputation, and the operation was performed with her consent after the leg had become almost gangrenous, 18 days after the injury.
Death 7 hours.			Death from collapse. No full reaction.
Death 8 hours.	Comp. fracture of cranium.	Dr. Homans.	Death from collapse.
Recovery 277 days.	Delirium tremens. Necrosis of stump. Repeated abscesses.	Dr. Cheever.	Recovery was very slow, on account of the primary exhausted condition and the various debilitating and continued complications.
Recovery 71 days.	Varicella.	Dr. Cheever.	Recovery perfect, with very little constitutional disturbance.
Death 6 hours.		Dr. Homans.	Death from collapse.
Recovery 114 days.		Dr. Cheever.	
Recovery 61 days.		Dr. Buckingham.	
Death 6 days.	Delirium tremens.	Dr. Homans.	Death from exhaustion. Patient a miserable subject.
Death 5 hours.	Extreme shock.	Dr. Derby.	Death from collapse.
Recovery 67 days.	Necrosis.	Dr. Ropes.	
Recovery 77 days.	Phthisis.	Dr. Ropes.	
Recovery 73 days.	Phagedæna of stump.	Dr. Homans.	
Recovery 56 days.	Delirium tremens. Slight necrosis.	Dr. Cheever.	The patient entered with a simple fracture, but the violent motions of repeated attacks of delirium made it compound. The ankle was extensively diseased, and the patient's condition low.
Death 9 days.	Pyæmia.	Dr. Cheever.	Amputation was performed when the leg was in bad condition, and the constitutional state much depressed. Acupressure was successfully applied to the larger arteries; the needles being removed after 48 hours.
Recovery 98 days.	Phagedæna of stump.	Dr. Thorndike.	
Death 30 hours.	Extreme shock.	Dr. Derby.	Death from collapse.

RECAPITULATION.

Ratio of mortality, .34 per cent.
Average convalescence, 72 days.

No.	Name.	Age	Occupation.	Disease or Injury.	Operation.
1	Michael L. 3. 225.	43	Driller.	Lacerated wound of foot, gangrene.	Amp. through tarso-metatarsal articulation. (Secondary.)
2	James O'N. 3. 227.	23	Laborer.	Crush of toes, phalanges fractured. Gangrene.	Amp. after Chopart's method. (Secondary.)
3	George T. 2 206	23	Soldier.	Gangrene of foot, following injury.	Amp. after Hey's method. Secondary.
4	John M. 14. 25.	30	Laborer.	Comp. and com. fract of toes and metatarsus.	Amp. after Hey's method, the bases of the metatarsal bones (except the first) being sawed,
5	Sarah J. W. 17. 227.	17	Papermaker.	Comp. and com. fract of toes and metatarsus from boiler explosion.	Amp. by Chopart's method. (Primary.)

Result.	Complications.	Operator.	Remarks.
Amputation of leg. Recovery in 66 days.	Caries of tarsus.	Dr. Cheever.	The original injury was a lacerated wound on dorsum of foot. Sloughing of the soft parts followed, with necrosis of the bones beneath; a partial resection was performed, and subsequent amputation of the foot and of the leg. Patient's condition, poor.
Amputation of leg. Recovery in 8 weeks.	Phthisis caries of tarsus. Secondary hemorrhage.	Dr. Cheever.	Amputation of the leg was performed four weeks after the operation on the foot. Examination of the tendo Achillis, which had been divided at time of the Chopart's amp. showed attemp ted union by an elastic granular band, three quarters of an inch long.
Amp. of leg after 16 days. Death 46 days.	Extensive phagedæna; diarrhœa.	Dr. Stedman.	Death from exhaustion.
Recovery 50 days.	Delirium tremens.	Dr. Buckingham.	
Death 26 days.	Tetanus; phagedæna of stump.	Dr. Derby.	Pat. died in midst of fully developed tetanic symptoms, the tetanus having contin'd 12 days; partial relief from large subcut's inj's of morph.

Recapitulation.

Recovered, 3; (Primary, 0; Secondary, 3.)
Died, 2; (Primary, 1; Secondary, 1.)
Ratio of mortality, 40 per cent.
Average convalescence, 54 days.
Traumatic, 5; Idiopathic? 0.

In reviewing the cases of operation on the foot, we are struck by the fact that the last one, apparently as unpromising as any of them, made an immediate and excellent recovery, while only one of the remaining four escaped subsequent amputation; and we are led to ask whether some other reason than chance or coincidence may not be found to account for the greater success of partial removal of bones of the tarsus by excision or gouging, than by the amputation through, or below the tarsus.

Taught by the experience of four years' warfare, our army surgeons, we are told, prefer amputation above the ankle to Lisfranc's, Chopart's, or Syme's amputation of portions of the foot. The exigencies of crowded hospitals, of transportation, of depressing causes and epidemic influences, have wisely led them to discontinue operations whose chances of success are so largely governed by all these influences. In civil surgery such influences do not, or should not exist; but we think other anatomical and pathological reasons can be found which largely influence the results of partial amputations of the foot.

It is not a favorite operation in this country to amputate at the articulation of the radius with the scaphoid and semi-lunar bones (commonly called amputation through the wrist-joint); but would not that surgeon be deemed more than bold who should amputate between the two rows of carpal bones, or, were it feasible, at the junction of the carpus and metacarpus; and yet the same thing is advised and done on the foot, although the lower extremity has

notoriously far less vitality than the upper. Setting aside, first of all, the need and desirableness of saving all of the foot possible to walk upon, whereas an inch more or less at the wrist is of little consequence, and also the smaller size of the carpal bones, which may render them more vulnerable to caries, we yet find at last certain identical conditions peculiar to each, which militate against partial amputation. These conditions are the *arrangement and inter-communication of the synovial surfaces.* Four such surfaces are more commonly described in the foot, although six properly exist. The *first*, small and distinct, at the posterior articulation of the astragalus and os calcis. The *second* larger, at the anterior articulation of the astragalus and os calcis, and of the astragalus and scaphoid. The *third*, distinct, between the cuboid and os calcis. The *fourth*, the great synovial membrane, running through seven articulations, and uniting the scaphoid, the three cuneiform and the second and third metatarsal bones. A more or less distinct synovial cavity unites the fourth and fifth metatarsals to the cuboid; and a small, separate cavity, analogous to that of the metacarpal bone of the thumb and trapezium, lies between the metatarsal bone of the great toe and the internal cuneiform.

Now Lisfranc's operation, or amputation at the junction of the tarsus and metatarsus, opens the synovial surface of every articulation of the tarsus, as far back as Chopart's joint, in front of the astragalus and os calcis. In other words, the three cuneiform, the scaphoid and the cuboid bones are all laid

open to the access of pus, of decomposing gases and of the air, provided that primary union does not take place. What follows? The strong survive, the weak succumb. The vigorous constitution, not debilitated by bad habits, and the subject of Lisfranc's amputation, if under good hygienic influences, with a well-shaped flap, firmly adjusted, successfully goes through with what we may here truly call the *great task* of healing. Four articular cartilages, and one — the cuboid — a large one, must heal by first intention, without ulceration; and four extensive synovial surfaces must be promptly sealed by lymph. If all this be accomplished, we get a most useful foot. But, in the feeble subjects, or the badly nursed, we have first, probably, almost immediate union of the upper surface of the wound, which may deceive us into hopes of a good result; but very soon sinuses are formed in the two corners of the plantar flap, whence pus, at first laudable, and soon foul, sanious and oily, indicates too surely what is concealed within. The probe detects denuded bone on the extremities of the cuboid or cuneiforms, or all of them. And the mischief does not stop here. The whole tarsus swells and reddens; the skin grows puffy, shining and œdematous; pus burrows superficially towards the heel, and behind either malleolus; hectic, prostration and erysipelas ensue. The evil creeps on from one synovial surface to the next, until, pent up in the interior of the tarsus, the caries overleaps the septa which divide these articulations from those of the astragalus and os calcis. By this time, or long

before, the patient is on the point of succumbing, unless amputation be immediately performed. We cannot better typify these results than by repeating from the record of the first case in this paper: "Constitutional irritation increased day by day. Restless, painful nights were succeeded by despondent days. The complexion became straw-colored; the stomach irritable, alternating with diarrhœa. A probe passed through and through the stump; new abscesses collected and burrowed, with thin, sanious pus, and dead bone could be felt in many directions. On examination of the stump after amputation, it was found thoroughly diseased in every articulation. The three cuneiform bones were spongy wedges of caries; the scaphoid and cuboid were nearly as bad. The articulations of the astragalus and os calcis were likewise affected, and offensive pus was found in the ankle-joint, and even in the inferior articulation of the tibia and fibula."

Amputation through the tarsus, commonly called Chopart's operation, is done at the articulation of the scaphoid and astragalus, on the inner side, and the cuboid and os calcis on the outer. The latter is a separate synovial surface; but the former communicates with the anterior calcaneo-astragaloid articulation. To a limited extent it is, therefore, liable to the same objections as Lisfranc's operation, since it opens the way for pus and caries between the astragalus and os calcis, and ultimately to the ankle-joint. While running an equal risk, the stump which it leaves is not so desirable as that of Lisfranc's, since

it is so short as to be tilted downwards by the action of the sural muscles, unless the tendo-Achillis be divided.

It is not part of our purpose to speak of Syme's operation, amputation at the tibio-tarsal articulation, or Pirogoff's modification of it by retaining a portion of the os calcis, in this paper. For this amputation through the ankle-joint opens only one articulation, and the articular ends of the tibia and fibula are also sawn off. The only danger attending it, over ordinary amputations, depends upon the vitality of the flap; and the only question of expediency is as to the usefulness of the stump.

The stump left by Lisfranc's operation is an excellent one for practical use; but in any partial amputation of the foot above the tarso-metatarsal line, it is doubtful whether so good a stump can be obtained, or so good an artificial foot adjusted, as after an ordinary amputation of the leg. For it is to practical results entirely that we should look after the unavoidable mutilation of an amputation, and to them alone.

What reason can now be assigned for the prompt success of the fifth case reported? Here was caries of four months' duration, which had travelled to the posterior articulation of the astragalus and os calcis, pus burrowing into the sole, and a condition of constitutional disturbance threatening amputation. It seems to us that the result was due — first, to the prompt and very free incisions which gave exit to every source of irritation; second, to the fact that *the pos-*

terior calcanes-astragloid articulation is single synovial surface. Fortunately, the disease had penetrated no farther, and although both astragalus and os calcis were freely gouged here, no other articulations were opened.

It has been noticed by surgical authors, that the prognosis in idiopathic caries of the tarsus varies with the seat of the disease, and the chances of benefit by interference, as well; caries of the cuboid, astragalus, or os calcis, being much more amenable to treatment by excision and gouging, than disease of the scaphoid and cuneiform bones, where larger synovial surfaces are necessarily involved.

By a parity of reasoning, the same rules should apply to partial amputations of the foot — though, so far as we are aware, they have not been definitely laid down. For although instances undoubtedly occur in which entire bones, even the astragalus or os calcis, are removed by excision, for disease, with success, we must still adhere to general rules, and not to brilliant exceptions dependent on peculiar vigor of the patient. Certainly, the same reasons which influence us against opening other joints should hold good in a locality so prone to disease as the tarsus.

It remains to be seen what modifications of these operations have been proposed, or can be suggested to lessen their risks.

In the year 1799, antecedent to Lisfranc, Mr. Hey first did a partial amputation of the foot, which has borne his name in England since that time. This

amputation consisted in disarticulating the four lesser metatarsal bones from the tarsus, and sawing through the internal cuneiform. Except for its greater facility of performance, over what has been regarded as an anatomical *tour de mâitre* in the operating theatre, this operation is in nowise better than the disarticulation of the tarsus and metatarsus proposed by Lisfranc; for the great synovial cavity communicates with the second and third metatarsals, which Hey opens, and not with the first metatarsal, which he avoids by the saw.

On the other hand, we may safely open the joint of the first metatarsal and internal cuneiform with the knife, and saw across the other four metatarsal bones. Thus we avoid synovial cavities.

On the whole, the best amputation of the metatarsus is probably to cut through the skin only, over Lisfranc's joint, and to saw all five metatarsals below the articulation, covering them with the plantar flap, as in the usual way; and the cases calling for partial amputation in this vicinity must be few, in which it would not be possible to get sound tissue and skin enough to cover the one as well as the other amputation.

Of amputations through the tarsus, if we either do Chopart's operation, or even saw the head of the astragalus, we open the anterior calcaneo-astragaloid articulation. We may more safely disarticulate the cuboid from the os calcis, and the scaphoid from the cuneiform, leaving the scaphoid in, thus saving the anterior calcaneo-astragaloid articulation,

which communicates with the astragalo-scaphoid joint; or, if it be feasible, we may saw across both scaphoid and cuboid, without opening other articulations.

Lastly, what seems most feasible, disarticulate at the junction of the scaphoid and cuneiforms, and saw across the cuboid on the same line; making not more than one-third of an inch difference in the length of the stump from Chopart's disarticulation.

Until further experience shall have changed our conclusions, we are inclined to believe, therefore: —

First. That for any injury about the foot requiring amputation of the toes and metartasal bones, it is safest to amputate by sawing half an inch below Lisfranc's joint.

Second. That sawing through the tarsus or the cuboid, is preferable to Chopart's amputation.

Third. That for safety and practical results, amputation through the ankle joint by Syme's method is preferable to any amputation through the tarsus.

OTHER SURGICAL CASES.

Tetanus occurred four times, of which two were fatal.

The first case was in a young lad who had sustained a bruise, and slough of the heel. Treatment was by ether, opium and nourishment. The tendo

Achillis was divided to relieve tension. The disease was very acute, and terminated fatally in four days.

The second case occurred after Chopart's amputation, in a young woman. Life was continued longer. Treatment the same, being palliative. Death terminated her sufferings in five, or six days.

The third case was in a man of 45. The disease became chronic, and after several weeks he went out improved, but not well. Treatment, palliative.

The fourth case, in a young man, followed a slight injury to the leg. The symptoms were severe and lasting. He took the Calabar bean without any marked effect. He was then put upon very large doses of Bromide of Potash. Improvement followed. The disease became chronic, and he recovered. For the full details of this very interesting case, the reader is referred to the article of Dr. Derby, in the Boston Med. and Surg. Journal, for July 22d, 1869.

There were *eight* dislocations of the clavicle; one of the sternal end, upwards. The latter refused treatment. Good results were obtained in the dislocations of the Acromial end, by pads over the clavicle, plaster, straps and buckles carried around the fore-arm.

There were *four* dislocations of the hip, of which one was in an adult female who was struck above the trochanter by a falling sign-board, and the head of the bone dislocated into the thyroid foramen.

One dislocation of the sacrum, from being crushed in an elevator. There was no fracture of the pelvis. The patient survived several weeks.

One chronic dislocation of the patella outwards, the bone lying on the outer condyle of the femur. There was a very fair use of the limb.

There were *eleven* cases of ovarian dropsy. The treatment by Chlorate of Potash did not succeed. Seven were relieved by tapping. Of these one died of peritonitis. In one case the paracentesis was done just above Poupart's ligament, between the two abdominal rings. An elastic catheter was passed into the sac, and it was hoped that a permanent drain might be kept up, and the sac finally become obliterated. A purulent discharge ensued for some weeks, and then the wound closed. The sac was shrunken, hard, and not fluctuating. In a few months it refilled.

Ovariotomy was done four times, with fatal result. The patients survived the operation from 17 hours, to three days. Deaths from shock, apparently. The autopsies showed neither hemorrhage nor peritonitis. In the latter two cases the most careful precautions were used to separate the patients from Hospital influences, and to secure absolute purity of air, and of all the surroundings.

Two cases of perinephritic abscess were opened in the lumbar region, and recovered.

Of thirty cases of fistula in ano, two were rather remarkable. Both were in negro women, and had existed for many years without any satisfactory diagnosis having been made. The nates were very hard, thick and chronically inflamed, looking at first like malignant disease. The whole surface was perforat-

ed by sieve-like openings, through which issued a thin pus. Free incisions through all these sinuses finally revealed a false passage into the bowel as large as a goose-quill. After the spincter and sinuses had been laid open, recovery was speedy.

The septic poisons were causes of death in about fifty cases. Of these fatal cases, pyaemia caused thirty; phlegmonous erysipelas, ten; diffuse suppuration of the cellular tissue, seven; phlebitis, two. One case of pyæmia recovered. Out of 250 surgical deaths, these maladies caused about 20 per cent. There have been two periods of epidemic influence in the Hospital. Both occurred in mid-summer, when all the windows were kept open. The contagion could not be traced from patient to patient, though very complete tabulations of the wards were made, in the hope of throwing some light on its course and progress.

ARTICLE XIV.

GENERAL MEDICAL AND SURGICAL TABLES.

I.

GENERAL MEDICAL TABLES.

PREPARED BY CHARLES F. FOLSOM, HOUSE-PHYSICIAN IN 1869.

	Whole No. of Patients.	No. of Deaths.	Rate of Mortality.
General Diseases.			
A.			
Small Pox	4	0	0
Measles	24	3	12.5
Scarlet Fever	38	1	2.6
Dengue	1	0	.0
Typhus Fever	27	11	40.7
Cerebro-spinal Fever	4	2	50.
Typhoid Fever	188	32	17.
Simple Continued Fever	22	1	4.5
Febricula	50	0	0
Intermittent Fever	54	0	0
Remittent Fever	1	0	0
Mumps	2	0	0
Erysipelas	89	6	6.7
Puerperal Fever	1	1	100
Numbers carried forward	505	57	

	Whole No. of Patients.	No. of Deaths.	Rate of Mortality.
Numbers brought forward	505	57	00
B.			
Rheumatism	114	2	1.8
Acute Rheumatism	199	1	0.5
Subacute Rheumatism	104	0	0
Muscular Rheumatism	3	0	0
Lumbago	12	0	0
Chronic Rheumatism	140	0	0
Gout	2	0	0
Rheumatic Gout	1	0	0
Syphilis	51	1	2
Soft Chancre	1	0	0
Cancer	8	3	37.5
Cancer of Lung	1	1	100
Cancer of Œsophagus	3	1	33.3
Cancer of Stomach	10	7	10
Cancer of Colon	1	0	0
Cancer of Liver	4	2	50
Cancer of Spleen	1	1	100
Cancer of Ovary	1	1	100
Cancer of Uterus	12	1	8.3
Lupus	2	0	0
Leprosy	1	1	100
Tubercular Meningitis	4	4	100
Scrofulous Ophthalmia	1	0	0
Phthisis Pulmonalis	281	31	11
Tuberculosis	3	1	33.3
Diabetes	5	0	0
Purpura	5	1	20
Numbers carried forward	1,475	116	

	Whole No. of Patients.	No. of Deaths.	Rate of Mortality.
Numbers brought forward	1,475	116	00
Scurvy	2	0	0
Anæmia	63	0	0
Chlorosis	9	0	0
General Dropsy	13	2	15.4
Local Diseases.			
Diseases of the Nervous System.			
Diseases of the Brain and its Membranes.			
Cerebral Paresis	1	0	0
Encephalitis	6	1	16.7
Inflammation of the Brain	1	0	0
Softening of the Brain	1	0	0
Apoplexy	24	16	66 7
Sunstroke	17	5	29 4
Tumor of the Brain	1	1	100
Dis. of the Spinal Cord and its Membranes.			
Inflammation	6	0	0
Spinal Meningitis	1	1	100
Myelitis	3	2	66.7
Diseases of the Nerves.			
Paralysis	3	0	0
Hemiplegia	40	8	20
Paraplegia . . . . . ,	22	2	9
Locomotor Ataxy	12	0	0
Local Paralysis	1	0	0
[2] Functional Dis. of the Nervous System.			
Epilepsy	30	4	13.3
Shaking Palsy	1	0	0
Chorea	21	2	9.5
Numbers carried forward	1,753	160	

	Whole No. of Patients.	No. of Deaths.	Rate of Mortality.
Numbers brought forward	1,753	160	
Hysteria	48	0	0
Neuralgia	72	1	1.4
Catarrhal Neuralgia	1	0	0
Cephalalgia	5	0	0
Hemicrania	5	0	0
Sciatica	18	0	0
Rheumatic Sciatica	3	0	0
Pleurodynia	12	0	0
Anæsthesia	1	0	0
Hypochondriasis	12	0	0
Disorders of the Intellect.			
Mania	3	0	0
Acute Mania	1	0	0
Melancholia	1	0	0
Syphilophobia	3	0	0
Dementia	2	0	0
Insanity	5	0	0
General Paralysis	14	1	7.1
Diseases of the Ear.			
Diseases of the External Meatus.			
Otorrhœa	3	0	0
Inflammation	2	0	0
Diseases of the Internal Ear.			
Inflammation	2	0	0
Diseases of the Nose.			
Ozæna	1	0	0
Epistaxis	2	0	0
Numbers carried forward	1,969	162	

	Whole No. of Patients.	No. of Deaths.	Rate of Mortality.
Numbers brought forward	1,969	162	
Diseases of the Circulatory System.			
Diseases of the Heart and its Membranes.			
Pericarditis	6	2	33.3
Diseases of the Endocardium.			
Valvular Disease	35	13	37
Dis. of the Muscular Struc. of the Heart.			
Hypertrophy	10	0	0
Dilatation	4	1	25
Angina Pectoris	3	0	0
Diseases of the Arteries.			
Aneurism of the Aorta	5	3	60
Aneurismal Varix	1	0	0
Diseases of the Veins.			
Phlegmasia Dolens	1	0	0
Diseases of the Absorbent System.			
Inflammation of Glands	2	0	0
Diseases of Ductless Glands.			
Diseases of the Thyroid Gland.			
Exophthalmic Bronchocele	1	0	0
Diseases of the Supra-renal Capsules.			
Addison's Disease	6	1	16.7
Diseases of the Respiratory System.			
Disease of the Nostrils.			
Nasal Catarrh	1	0	0
Diseases of the Larynx.			
Laryngitis	5	0	0
Aphonia	2	0	0
Numbers carried forward	2,041	182	

	Whole No. of Patients.	Rate of Deaths.	Rate of Mortality.
Numbers brought forward	2,041	182	
DISEASES OF THE TRACHEA AND BRONCHI.			
Bronchitis	36	0	0
Acute Bronchitis	46	0	0
Subacute Bronchitis	5	0	0
Chronic Bronchitis	19	1	5.25
Capillary Bronchitis	2	1	50
Asthma	29	1	3.4
DISEASES OF THE LUNGS.			
Pneumonia	208	34	16.3
Pleuro-Pneumonia	1	0	0
Gangrene	6	4	66.7
Congestion	1	0	0
Hemoptysis	6	0	0
Pulmonary Apoplexy	1	0	0
Œdema	1	1	100
Emphysema	4	1	25
DISEASES OF THE PLEURA.			
Pleurisy	39	4	10
Chronic Pleurisy	1	0	0
Empyema	1	0	0
Hydrothorax	1	0	0
DISEASES OF THE DIGESTIVE SYSTEM.			
DISEASES OF THE MOUTH.			
Stomatitis	3	0	0
DISEASES OF THE FAUCES AND PALATE.			
Tonsillitis	40	0	0
Sloughing Sore Throat	1	0	0
Numbers carried forward	2,492	229	

	Whole No. of Patients.	No. of Deaths.	Rate of Mortality.
Numbers brought forward	2,492	229	
DISEASES OF THE PHARYNX.			
Pharyngitis	11	0	0
Abscess	1	0	0
DISEASES OF THE ŒSOPHAGUS.			
Dysphagia Constricta	1	0	0
DISEASES OF THE STOMACH.			
Gastritis	4	0	0
Chronic Ulcer	14	1	7.1
Dyspepsia	115	0	0
Gastrodynia	5	0	0
Vomiting	4	0	0
DISEASES OF THE INTESTINES.			
Enteritis	9	1	11
Typhlitis	1	0	0
Dysentery	58	10	17.2
Obstruction	1	0	0
Stricture	2	2	100
Hernia	1	1	100
Diarrhœa	50	10	20
Choleraic Diarrhœa	20	0	0
Colic	16	1	6.25
Lead Colic	24	0	0
Constipation	8	0	0
DISEASES OF THE RECTUM AND ANUS.			
Hemorrhoids	2	0	0
DISEASES OF THE LIVER.			
Hepatic	1	0	0
Hepatitis	8	0	0
Numbers carried forward	2,848	255	

	Whole No. of Patients.	No. of Deaths.	Rate of Mortality.
Numbers brought forward	2,848	255	
Hepatic Congestion	5	0	0
Abscess	3	2	66.7
Cirrhosis	14	8	57
Tumor of the Liver	1	0	0
Jaundice	11	1	9
Diseases of the Hepatic Ducts and Gall Bladder.			
Gall Stones	2	0	0
Diseases of the Peritoneum.			
Peritonitis	11	7	63.6
Ascites	8	0	0
Diseases of the Urinary System.			
Diseases of the Kidney.			
Bright's Disease	108	30	27.8
Calculi	3	0	0
Hæmaturia	4	0	0
Suppression of Urine	4	1	25
Diseases of the Bladder.			
Cystitis	13	4	3
Calculus	5	0	0
Incontinence of Urine	7	0	0
Gonorrhœa and its Complications.			
Gonorrhœa	2	0	0
Diseases of the Generative System.			
Dis. of the Male Organs of Generation.			
Diseases of the Testicle.			
Spermatorrhœa	1	0	0
Numbers carried forward	3,050	308	

	Whole No. of Patients.	No. of Deaths.	Rate of Mortality.
Numbers brought forward	3,050	308	
Diseases of the Female Organs of Generation in the Unimpregnated State.			
DISEASES OF THE OVARY.			
Inflammation	9	0	0
Dislocation	1	0	0
Tumor	6	2	33.3
DISEASES OF THE BROAD LIGAMENT.			
Pelvic Cellulitis	12	0	0
DIS. OF THE UTERUS, INCLUDING THE CERVIX.			
Leucorrhœa	15	0	0
Inflammation	9	0	0
Ulcer	2	0	0
Polypus	1	0	0
Retroversion	9	0	0
Anteflexion	1	0	0
Prolapsus	17	0	0
Procidentia	1	0	0
Subinvolution	1	0	0
DISEASES OF THE VAGINA.			
Inflammation	5	0	9
Tumor	1	0	0
DISEASES OF THE VULVA.			
Inflammation	1	0	0
FUNCTIONAL DIS. OF THE FEMALE ORGANS OF GENERATION.			
Amenorrhœa	15	0	
Dysmenorrhœa	5	0	0
Numbers carried forward	3,161	310	

	Whole No. of Patients.	No. of Deaths.	Rate of Mortality.
Numbers brought forward	3,161	310	
Paramenia	10	0	0
Menorrhagia	18	0	0
Hemorrhage	2	0	0
Affections connected with Pregnancy.			
Disorders of the Digestive System.			
Vomiting	1	0	0
Disorders of the Generative System.			
Abortion	14	0	0
Threatened Abortion	2	0	0
Sequelæ of Abortion	1	0	0
Sequelæ of Miscarriage	2	1	50
Affections Consequent on Parturition.			
Puerperal Mania	1	0	0
Diseases of the Female Breast.			
Abscess	1	0	0
Diseases of the Organs of Locomotion.			
Diseases of Bones.			
Periostitis	2	0	0
Syphilitic Periostitis	1	0	0
Diseases of Joints.			
Synovitis	1	0	0
Diseases of the Muscular System.			
Atrophy of the Deltoid	1	0	0
Diseases of the Cellular Tissue.			
Perinephritic Abscess	2	0	0
Numbers carried forward	3,210	311	

	Whole No of Patients.	No. of Deaths.	Rate of Mortality.
Numbers brought forward	3,210	311	
Diseases of the Cutaneous System.			
Erythema	17	0	0
Erythema Papulatum	2	0	0
Erythema Tuberculosum	1	0	0
Erythema Nodosum	2	0	0
Erythema Iris	1	0	0
Erythema Œdematosum	1	0	0
Erythema Nodosum et Papulatum . . .	1	0	0
Roseola	1	0	0
Urticaria	2	0	0
Prurigo	2	0	0
Lichen Scrofulosa	1	0	0
Psoriasis	9	0	0
Psoriasis Guttata	1	0	0
Herpes	1	0	0
Herpes Zoster	3	0	0
Pemphigus	1	0	0
Eczema	15	0	0
Eczema Rubrum	2	0	0
Eczema Impetiginodes	6	0	0
Chronic Eczema	11	0	0
Impetigo	5	0	0
Rupia	5	0	0
Ecthyma	1	0	0
Acne Rosacea	1	0	0
Stearrhœa	1	0	0
Boil	1	0	0
Pruritus	1	0	0
Numbers carried forward . . .	3,305	311	

	Whole No. of Patients.	No. of Deaths.	Rate of Mortality.
Numbers brought forward	3,305	311	
Scabies	1	0	0
Phthiriasis	1	0	0
Conditions not necessarily associated with General or Local Diseases.			
Debility	270	2	0.7
Nervous Prostration	1	0	0
Neurasthenia	1	0	0
Asthenia	2	1	50
Poisons.			
METALS AND THEIR SALTS.			
Arsenic	1	0	0
Lead	2	0	0
VEGETABLE POISONS.			
Opium	3	2	66.7
Morphia	1	0	0
Alcohol	18	5	27.7
Delirium Tremens	13	5	38.5
Sumach	2	0	0
Dogwood	1	0	0
Injuries.			
GENERAL INJURIES.			
Asphyxia from Drowning	1	0	0
UNCLASSIFIED.			
Tænia	2	0	0
Impregnation	5	0	
Parturition	1		
Numbers carried forward	3,631	326	

	Whole No. of Patients.	No. of Deaths.	Rate of Mortality.
Numbers brought forward	3,631	326	
Sequelæ of Parturition	1	0	0
Malingerer	1	0	0
Uræmia	5	4	80
Unknown	3	2	66.7
Surgical and Ophthalmic Cases . . .	48	0	0
	3,689	332	9

REPORT OF MEDICAL OUT-PATIENT DEPARTMENT.

This department for treatment of Medical Out-Patients was opened April 1st, 1866, and has been in operation therefore for a term of three years and two months.

During this period there have been treated 9,324 patients, and the forms of disease, with the number of cases of each, are detailed as follows: —

Abscess alveolar	1	Anæsthesia	1
Abscess of neck	3	Analgesia	1
Abscess of lung	1	Anasarca	13
Acne	17	Aneurism	5
Adenitis	6	Angular curvature of spine	1
Adiposis	3	Anorexia	24
Addison's disease	2	Anteflexion of womb	6
Alcholismus	10	Anteversion of womb	2
Alopecia	2	Aphasia	1
Amenorrhœa	172	Aphonia	9
Amygdalitis	81	Aphthæ	8
Anæmia	702	Arrest of development	2

Ascarides	19
Ascites	8
Asthma	28
Ataxia progressive locomotor	2
Bright's disease	28
Bronchitis (acute and chronic)	1,084
Calculus vesical	1
Cardiac disease	95
Catarrh, nasal	157
Cephalalgia	101
Cerebral disease	5
Cessation of menstruation	13
Cholera morbus	1
Chorea	46
Cirrhosis	1
Colic	6
Constipation	586
Convulsions	5
Coryza	7
Cough	330
Croup	1
Cutaneous diseases (referred to department of cutaneous disease)	64
Cyanosis	3
Cystitis	3
Cystocele	3
Deafness	27
Debility	675
Delirium tremens	2
Diabetes	1
Diarrhœa	148
Diphtheria, sequelæ of	1
Diuresis	1
Dysentery	32
Dysmenorrhœa	41
Dyspepsia	799
Dysuria	20
Dumbness, congenital	1
Eczema	80
Eczema capitis	12
Elephantiasis	1
Elongation of uvula	2
Emesis	18
Emphysema	14
Enlarged glands	39
Enlarged spleen	1
Enteritis	3
Enuresis	22
Epilepsy	41
Epistaxis	8
Erysipelas	7
Erythema	5
Erythema nodosum	6
Fatty stools	1
Favus	1
Febricula	42
Fever intermittent	36
Fever remittent	6
Fever typhoid	4
Fibrous tumor of uterus	1
Fissure of palate	1
Flatulence	9
Formication	3
Frequent micturition	3
Furunculosis	16
Gastric cancer	2
Gastric disturbance	74
Gastric ulcer	2
Glossitis	1
Gout	1
Gout, rheumatic	2
Goitre	3
Gonorrhœa	27
Hematemesis	4
Hemorrhoids	45
Hemoptysis	45
Hemicrania	1
Hemiplegia	12
Hernia	6

Herpes	18
Herpes preputialis	1
Herpes zoster	5
Hepatic disease	15
Hydrocephalus	4
Hyperæmia	1
Hyperæsthesia	1
Hypertrophy of heart	2
Hypochondriasis	19
Hysteria	24
Idiocy	2
Impetigo	17
Insanity	4
Insomnia	3
Intestinal hemorrhage	1
Jaundice	11
Laryngitis	13
Lead poisoning	13
Leucocythemia	3
Leucorrhœa	95
Lichen	11
Lithiasis	5
Lumbago	34
Lumbricoides	13
Lupus	1
Lymphatic abscess	1
Marasmus	21
Meningitis	1
Menorrhagia	54
Metritis	24
Movable kidney	2
Myalgia	12
Nephritis	3
Neuralgia	95
Nicotism	7
Nostalgia	1
Œdema	5
Œsophagus, stricture of	1
Orchitis	2
Otalgia	5
Otorrhœa	20
Ovarian tumor	3
Ozœna	20
Oxyuris vermicularis	1
Pain	252
Palpitation	9
Paralysis	36
Paralysis agitans	3
Paralysis facial	1
Paralysis of sensation	1
Paramenia	1
Paraplegia	1
Parotitis	3
Pediculi	15
Periostitis	8
Pertussis	36
Petechiæ	1
Pharyngitis	174
Phlebitis	1
Phthisis pulmonalis	717
Phthisis laryngea	2
Phymosis	1
Pityriasis	5
Pleurisy	82
Pleuritic effusion	11
Pleurodynia	14
Pneumonia	42
Poisoning by ivy	1
Polygalactia	2
Pott's disease	3
Pregnancy	49
Procidentia uteri	1
Prolapsus ani	6
Prolapsus uteri	30
Prurigo	17
Pruritus	5
Pruritus senilis	3
Psoriasis	30
Purpura	4
Rachitis	3
Renal calculus	1
Renal colic	1

Retention of menses	6
Retroflexion of uterus	3
Retroversion of uterus	3
Rheumatism	482
Rheumatism, gonorrhœal	2
Rheumatism, syphilitic	2
Rubeola	5
Rubeola, sequelæ of	7
Rupia	1
Rupture of perineum	1
Scabies	43
Scarlatina	6
Scarlatina, sequelæ of	8
Sciatica	22
Scorbutus	1
Scrofulosis	27
Softening of brain	1
Sore nipples	1
Sore throat, specific	1
Spermatorrhœa	16
Sprain, results of	2
Strain, results of	1
Stomatitis	33
Stomatitis, mercurial	4
Sunstroke	10
Suppression of menses	1
Sycosis	7
Synovitis	2
Syphilis	82
Syphilophobia	1
Tabes mesenterica	1
Tænia	5
Teething	19
Threatened abortion	1
Tinea tonsurans	1
Tinnitus aurium	2
Torticollis	2
Tubercular meningitis	1
Tuberculosis	1
Tumor of uterus	1
Ulcers of mouth	5
Urticaria	10
Uterine disease	16
Vaginitis	1
Varicella	1
Variola	1
Vertigo	16
Vicarious menstruation	1
Vulvitis	1
Weaning	1
Referred to admitting Physician	40
Referred to Surgeon of out-patients	99
Referred to Ohpthalmic Surgeon	1
From various causes, diagnosis not stated	47
	9,324

II.

GENERAL SURGICAL TABLES.

PREPARED BY CHAS. B. BRIGHAM, HOUSE-SURGEON, IN 1869.

TABLE OF SURGICAL DISEASES.

DISEASE.	Recovered.	Died.	Rate of Mortality.
Abscess	156	5	.03
diffuse	3	7	.70
lumbar	5	0	0
mammary	11	0	0
metastatic	1	0	0
nephritic	1	0	0
perinephritic	1	0	0
prostatic	1	0	0
Amputation, accidental	4	1	.20
Aneurism diffused	0	2	100.
popliteal	2	1	.33
Antrum, dropsy of	1	1	.50
Apoplexy	3	0	0
Arthritis, chronic	1	0	0
Ascites	1	0	0
Atresia Vaginæ	0	1	100.
Bronchocele	1	1	.50
Bubo	9	0	0
Burns and Scalds	44	16	.26
Bursa inflamed	9	0	0
Calculus prostatic	1	0	0
vesical	6	0	0
Numbers carried forward 84	261	35	

Disease.	Recovered.	Died.	Rate of Mortality.
Numbers brought forward	261	35	
Cancer of bladder	0	1	100.
breast	4	2	.33
rectum	0	1	100.
rectum and bladder	2	1	.33
many organs	0	1	100.
uterus	1	0	0
Carbuncle	13	0	0
Caries	25	0	0
of spine	2	1	.33
Chancre	22	1	.04
Chancroid	4	0	0
Cicatrix from burn	1	1	.50
Concussion of brain	34	0	0
spinal chord	3	3	.50
Compression of brain	0	5	100.
Contusions	217	4	.02
diffused of brain	0	1	100.
Croup	6	8	.57
Contraction of biceps	1	0	0
Crushing of	10	3	.23
upper extrem.	2	0	0
lower extrem.	3	6	.66
upper and lower extrem. . . .	0	2	100.
both upper extrem.	0	1	100.
both lower extrem.	0	1	100.
Cystitis	4	0	0
Deformity after fracture of	1	0	0
foot	3	0	0
Numbers carried forward	619	78	

Disease.	Recovered.	Died.	Rate of Mortality.
Numbers brought forward	619	78	
Deformity of nose	1	0	0
palate	4	0	0
Dislocation of ankle	3	0	0
clavicle	8	0	0
elbow	10	0	0
hip	4	0	0
neck	0	1	100.
sacrum	0	1	100.
shoulder	22	0	0
spine	0	1	100.
comp. of thumb	3	0	0
with fracture	3	0	0
Disease, knee	20	5	.20
elbow	1	0	0
Eczema	1	0	0
Epididymitis	1	0	0
Epistaxis	5	0	0
Epulis	2	0	0
Erysipelas traumatic	18	2	.10
phlegmonous	7	8	.53
Erythema nodosum	1	0	0
tuberculatum	1	0	0
Fistula in ano	29	1	.03
in œsophago	1	0	0
in recto et urethra	1	0	0
in thorace	2	1	.33
Fracture of os frontis	1	0	0
ossa nasi	1	0	0
Numbers carried forward	769	98	

Disease.	Recovered.	Died.	Rate of Mortality.
Numbers brought forward	769	98	
Compound fracture of ossa nasi . . .	1	1	.50
Fracture base of skull	0	18	100.
skull	0	1	100.
Compound fracture skull	12	14	.53
Fracture superior maxilla	1	2	.66
inferior maxilla	19	1	.05
Compound fracture inferior maxilla . . .	7	0	0
clavicle	53	0	0
Comminuted fracture of clavicle . . .	1	0	0
scapula	5	1	.16
Coracoid process scapula	4	0	0
Complicated fracture of scapula . . .	0	1	100.
Fracture ribs	45	3	.06
Compound fracture of ribs . . .	1	0	0
Fracture humerus	41	2	.04
Compound fracture of humerus . . .	7	3	.30
Comminuted fracture of humerus . . .	1	0	0
Fracture of anat. neck of humerus . . .	1	0	0
surg. neck of humerus	5	0	0
elbow into joint	13	0	0
both humeri	0	1	100.
radius	41	1	.02
radius at wrist	10	0	0
ulna	4	0	0
Compound fracture of ulna	1	0	0
Fracture radius and ulna	28	0	0
Compound fracture radius and ulna . . .	7	3	.30
and com. fracture of radius and ulna	3	0	0
Numbers carried forward	1,080	150	

Disease.	Recovered.	Died.	Rate of Mortality
Numbers brought forward	1,080	150	
Fracture of hand	2	0	0
metacarpus	2	0	0
fingers	9	0	0
sternum	1	2	.66
spine	0	1	100.
ilium	7	1	.12
pelvis and femur	0	2	100.
femur neck	29	3	.09
femur shaft	71	4	.05
Compound fracture femur	7	8	.53
Fracture patella	8	0	0
ligament of patella	2	0	0
tibia	36	0	
Compound fracture tibia	6	1	.14
Fracture knee-joint	2	1	.33
both femora	1	0	0
tibia and fibula	104	1	.009
Compound fracture tibia and fibula . .	17	14	.45
Com. and commin'd frac. of tibia and fibula .	11	7	.38
both tibiæ and fibulæ	1	1	.50
Fracture of tibia and fibola and femur . .	1	0	0
tibia with dislocation . . .	1	0	0
fibula	34	0	0
ankle	1	0	0
tarsus	5	2	.28
metatarsus	1	0	0
Compound fracture of metatarsus . . .	2	0	0
Fracture toes	5	0	0
Numbers carried forward	1,446	197	

Disease.	Recovered.	Died.	Rate of Mortality.
Numbers brought forward	1,446	197	
Compound fracture toes	7	0	0
pelvis, with rupture of bladder	0	3	100.
many bones	7	7	.50
Frost-bite	13	1	.07
Foreign body in œsophagus	2	0	0
side	1	0	0
urethra	0	1	100.
Gonorrhœa	10	0	0
Gunshot wounds	1	0	0
of head	4	0	0
face	1	0	0
arm	1	0	0
hand	5	0	0
thorax	4	0	0
abdomen	0	1	100.
back	1	0	0
crest of ilium	1	0	0
groin	2	1	.33
thigh	4	1	.20
foot	0	1	100.
Harelip	2	0	0
Hematocele	1	0	0
Hemorrhoids	34	1	.03
Hernia, inguinal	23	2	.08
inguinal, with hydrocele	0	1	100.
crural	2	0	0
umbilical	1	0	0
irreducible	1	0	0
Numbers carried forward	1,574	223	

Disease.	Recovered.	Died	Rate of Mortality.
Numbers brought forward	1,574	223	
Hernia, strangulated	5	0	0
double	1	0	0
double, with hydrocele	1	0	0
Hydrocele	21	0	0
Incised wounds	7	0	0
of scalp	6	0	0
head	6	0	0
face	6	3	.33
throat	10	0	0
throat and trachea	2	1	.33
throat, with delirium tremens . .	15	1	.06
axilla	0	1	100.
arm	15	0	0
elbow	1	0	0
hand	15	2	.11
abdomen	1	0	0
thigh	6	0	0
knee	4	1	0
foot	9	0	0
Lacerated wounds	1	0	0
of scalp	17	1	.05
head	51	0	0
face	10	0	0
eye	1	0	0
tongue	2	0	0
neck	1	0	0
arm	8	0	0
hand	46	1	.02
Numbers carried forward	1,842	233	

Disease.	Recovered.	Died.	Rate of Mortality.
Numbers brought forward	1,842	233	
Lacerated wrist	1	0	0
finger	1	0	0
back	1	0	0
scrotum	1	0	0
thigh	0	1	100.
knee	3	0	0
leg	10	1	.09
foot	9	0	0
stump	1	0	0
Intussusception	1	0	0
Internal injuries	0	2	100.
Leucocythemia	3	0	0
Lupus	2	1	.33
Malignant pustuie	2	0	0
Morbus coxae	43	3	.06
Naevus	2	0	0
Neuroma	1	0	0
Necrosis	12	7	.36
of skull	2	0	0
orbit	0	1	100.
inf. turb. bone	1	0	0
jaw	4	1	.20
scapula	1	0	0
humerus	8	0	0
radius and ulna	1	0	0
hand	9	1	.10
wrist	2	2	.50
phalanges	3	0	0
Numbers carried forward	1,966	250	

Disease.	Recovered.	Died.	Rate of Mortality.
Numbers brought forward	1,966	250	
ilium	1	0	0
femur	7	0	0
tibia	7	0	0
leg	11	0	0
tarsus	4	0	0
foot	11	1	.08
stump	7	2	.22
sternum	1	0	0
Œdema of face	1	0	0
Onychogryphosis	11	0	0
Orchitis	12	0	0
Ostitis	1	0	0
Ovarian dropsy	7	4	.36
Paraphymosis	4	0	0
Paronychia	12	0	0
Phlebitis	4	2	.33
Periostitis	5	0	0
Phymosis	9	0	0
Polypus uteri	2	1	.33
Prolapsus ani	3	1	.25
uteri	1	0	0
Punctured wounds of face	1	1	.50
neck	0	1	100.
chest	2	0	0
abdomen	6	0	0
back	3	0	0
wrist	1	0	0
Pyæmia	1	30	.96
Numbers carried forward	2,101	293	

Disease.	Recovered.	Died.	Rate of Mortality.
Numbers brought forward	2,101	293	
Rachitis	1	0	0
Retention of urine	4	0	0
Rupia syphilitica	1	0	0
Rupture of eyeball	1	1	.50
urethra	2	1	.33
vein	1	0	0
Sinus in leg	1	0	0
Spine, angular curvature of	2	0	0
lateral curvature of	5	0	0
Sprains	51	0	0
Stricture of rectum	1	0	0
urethra	32	6	.15
do. with fistula	4	1	.20
do. with perineal abscess	3	0	0
do. with extravasation	2	1	.33
Synovitis, acute	26	0	0
chronic	4	0	0
Testicle diseased	11	1	.08
Tetanus	2	2	50.
Tonsillitis	2	0	0
Tumor Cystic	7	1	.13
Cheloid	1	0	0
Encephaloid	4	2	.33
Encysted	2	0	0
Enchondromatous	2	0	0
Epithelial	18	1	.05
Fatty	10	0	0
Fibrous	8	1	.12
Numbers carried forward	2,309	311	

Disease.	Recovered.	Died.	Rate of Mortality.
Numbers brought forward	2,309	311	
Tumor of uterus	2	3	.60
Fibro cartilaginous	2	0	0
Fibro plastic	4	0	0
Glandular	15	1	.06
Gummous	12	0	0
Mammary	2	0	0
Melanotic	1	1	.50
Naso-pharyngeal	2	1	.33
Nucleated	1	0	0
Plastic	1	0	0
Painful subcutaneous	1	0	0
Vascular	2	0	0
Schirrhus	3	0	0
Ulcers, chronic	206	5	.02
specific	43	0	0
varicose	48	0	0
Varirocele	3	0	0
Varix	20	0	0
Vulva, vegetations of	1	0	0
Grand total	2,675	322	.10,7

Total number of accidents for five years, 1,522.

Note.—The term recovery in incurable diseases means that they left the Hospital relieved and were lost sight of. These tables are made as brief as possible, and allowance should be made for condensation. The ratio of mortality applies only to the time they were in the Hospital.

MEDICAL CASES REPORTED IN SURGICAL TABLES.

Disease.	Recovered.	Died.	Ratio.
Constipation	3	0	0
Delirium tremens	1	0	0
Dysmenorrhœa	1	0	0
Epilepsy	1	0	0
Hysteria	2	0	0
Insolatio	0	1	100.
Lightning-stroke	1	0	0
Myalgia	1	0	0
Neuralgia	3	0	0
Nocturnal Emissions	1	0	0
Œdema of Face	1	0	0
Paraplegia	0	1	100.
Parturition	0	1	100.
Peritonitis	0	1	100.
Poisoning by Arsenic	3	0	0
" Sulphuretted Hydrogen	0	2	100.
Purpura Hemorrhagica	0	1	100.
Tuphlo Enteritis	0	1	100.
Uterus, disease of	2	0	0
" hemorrhage from	1	0	0
Unknown	1	0	0
Vulvitis	2	0	0
Total	24	8	.25.

TABLE OF SURGICAL OPERATIONS.

OPERATION.	RESULT.	TOTAL.
Amputations. Shoulder joint.	Four primary, dead (one with many fractures, one with pyæmia); two primary, well; two secondary, well; three unrecorded	11
Arm.	Nine primary, well (one with necrosis); five primary, died (one of delirium tremens, one with many fractures, three of pyæmia); three unrecorded. Four secondary, well; two secondary, died of pyæmia; one left the hospital with pyæmia. One pathological, recovered, with ulceration of stump; one pathological, well; one died of pyæmia	27
Forearm.	Eight primary, well; one primary, dead of pyæmia; one primary, recovered with necrosis; three secondary, well (one with necrosis); one secondary, died of pyæmia; three pathological, well; one pathological, died of pyæmia; three unrecorded	21
Hand.	One remaining in Hospital	1
Fingers.	Thirty-eight primary, well; two primary, died of pyæmia; two secondary, well; five pathological, well; one resulted in amputation of arm; five unrecorded	53
Thumb.	Three unrecorded; one well	4
Thigh.	Four primary, well; fourteen primary, died (six dead of pyæmia, two dead of shock, three of exhaustion); two secondary, well; one secondary, recovered with necrosis; one secondary remaining in the Hospital (1867); two secondary, dead; five pathological, well; one doing well; five pathological, died (one of shock, two of pyæmia); nine unrecorded	44
Thigh and leg.	One double amputation, traumatic, died . . .	1
Knee-joint.	One unrecovered with necrosis of femur . . .	1

OPERATION.	RESULT.	TOTAL.
Leg.	Five primary, well; one primary, remaining in Hospital (1866); one primary, with pyæmia recovered with necrosis; six primary, dead (two of exhaustion, one of pyæmia, one of shock, one with compound fracture of the skull); four secondary, well; one discharged with phthisis; one remaining in Hospital; two secondary, dead; five pathological, well; one doing well; five unrecorded . .	32
Foot. (Lisfranc.)	One primary, well; one secondary, well; two subsequently amputated, discharged well . . .	4
Foot. (Chopart.)	One primary, subsequently amputated; one primary, dead of tetanus	2
Toes.	Four primary, well; one primary, remaining in Hospital (1866); one subsequently amputated, discharged, well; five primary, died of pyæmia; one intermediate, left the Hospital with pyæmia; six secondary, well; two secondary, recovered, with necrosis; one secondary subsequently amputated; nine pathological, well; one unrecorded.	31
Breast.	Six for scirrhus (four well, one dead, one relieved); one proliferous cyst, well	7
Ablation of superior maxilla.	Three for carcinoma; two well; one not relieved .	3
Acupressure on the femoral artery.	One for popliteal aneurism, well; one for popliteal aneurism, died of gangrene	2
Anchylosis of elbow.	One relieved	1
Knee.	Two not relieved	2
Artery, brachial ligature of.	One well (for secondary hemorrhage) . . .	1
Artery lingual.	One primary, died of cancer; one primary, for laceration of tongue, well; one with cancer of the tongue, the disease relieved	

OPERATION.	RESULT.	TOTAL.
Artery carotid.	One primary, died of cancer; one secondary, died of cut throat (both had paralysis after ligature); one for hemorrhage, following a gunshot wound, well	3
Artery, common carotid.	One died in ten weeks of abscess of the brain	1
Artery, innominate.	One dead	1
Artery, radial.	One for metacarpal abscess, well	1
Artery, ulnar.	One for incised wound of hand, died of pyæmia; one traumatic, subsequently amputated	2
Artery, palmar arch.	One, doing well in Hospital (1868)	1
Bullet, removal of.	Four, well (one from groin, one from axilla, one from crest of ilium); one after penetrating the chest, was removed from the back, patient in the Hospital (1867); two unrecorded	7
Carbuncle.	Two, well	2
Circumcision.	Two well; one unrecorded	3
Dislocation of shoulder.	Eight well; three unrecorded	11
Dislocation of elbow.	Three well; one primary, not relieved; one primary compound, died of pyæmia; one pathological, not relieved; one remaining in the Hospital (1869); one unrecorded	8
Dislocation of radius & ulna.	Four well	4
Dislocat'n hip.	Four well; one a year's standing, not relieved	5
Dislocation, indefinite.	Thirteen well; three relieved	16
Epulis.	One well by section of the jaw	1
Excision of elbow joint.	Four well; one remaining in the Hospital (1869); one primary, not relieved; one primary, died of pyæmia; one pathological, not relieved	8

OPERATION.	RESULT.	TOTAL.
Excision of wrist joint.	One primary, four inches of the carpal end of ulna removed, well with use of forearm; one secondary, died of Bright's disease . . .	2
Excision head of femur.	Four well; two relieved; three in Hospital, (1869); one in Hospital doing well; one dead . . .	11
Excision of knee.	Two pathological doing well in Hospital; one dead of pyæmia; one amputated; one well; one unrecorded	6
Fistula in ano.	Twenty-two well; three relieved; two remaining in Hospital; one dead of tuberculosis; three unrecorded	31
Fistula in urethra.	One remaining in Hospital	1
Foreign body in urethra.	One died of erysipelas	1
Harelip.	Two well; three for lacerated wounds well; three relieved; one unrecorded	9
Harelip double.	One well	1
Hæmatocele.	One well; one relieved (castration)	2
Hemorrhoids.	Thirteen well; eight relieved; one remaining in Hospital; one dead of pyæmia; three unrecorded	26
Hernia, radical cure.	Six well; three relieved; one remaining in Hospital; two not relieved	12
Hernia, strangulated.	Four well; (three omental); four dead; one relieved	9
Hernia, inguinal strangulated.	One (male) strangulated, eighteen hours by twist in omentum well; one (female) strangulated, six days, dead	2
Hernia, femoral strangulated.	One (female) strangulated, seven days, dead; two unrecorded	3

OPERATION.	RESULT.	TOTAL.
Hernia, femoral, rad. cure.	One (Woods method), not relieved . . .	1
Hydrocele.	Seventeen well; five relieved; two not relieved (one with seton in scrotum); two not recorded .	26
Lithotomy.	Four well; one relieved	5
Lithotrity.	One relieved	1
Minor operations.	Three hundred and two well; twenty-two unrecorded	324
Naevus.	One unrecorded	1
Necrosis.	Thirty-one well; (one trephined); thirty relieved; two not relieved; three in Hospital; six unrecorded	72
Necrosis of stump.	One followed by amputation; one in Hospital. (1868); one died	3
Œsophagotomy.	One well; one for fishbone in the œsophagus three days, well (1867); one for brass pin in the œsophagus three days, well	3
Ovariotomy.	Five dead; one of shock, one in twenty-seven hours, one in two hours, one in seventeen hours. One in twenty-eight hours (ten tappings in one year)	5
Paracentesis abdominis.	Eight relieved; one unrecorded	9
Paracentesis thoracis.	One well; one for traumatic empyæma, died; one unrecorded	3
Perineal section.	Seven well (one rupture of urethra, one stricture and extravasation, one by direct puncture); seven relieved (three with stricture and fistula); six dead (two with ruptured bladder and fractured pelvis, two of pyæmia); one in hospital (1866)	21
Perineorraphy	One in hospital, nearly well	1
Perinephritic abscess.	Two well; one dead	

OPERATION.	RESULT.	TOTAL.
Phymosis.	Nine well	5
Plastic operations.	Two well (one for lacerated wound of scrotum, one rhinoplastic); three not relieved (one for burn of hand, two for laceration of the heel) . .	9
Polypus nasopharyngeal.	Three (one dead, two removed by temporary depression of superior maxilla, well) . . .	3
Polypus uteri.	One unrecorded; one died of periotonitis; one died of anæmia	3
Prolapsus ani.	One well; two relieved; one died of pneumonia, age 60	4
Punctured antrum.	One well; one dead of gangrene of the lungs . .	2
Punctured bladder.	Three relieved; two followed by perineal section; one died of tuberculosis	6
Removal of bullet.	One well; one in hospital	2
Removal of eye.	One for pistol-shot wound, well	1
Removal of depressed fragments in the cranium.	One dead	1
Removal of needle from side.	One well	1
Removal of portion of tibia.	Two for fracture (one well, one in hospital) .	2
Resection of tibia.	One well; one dead of shock	2
Resection of metacarpal bone.	One followed by amputation, well	1
Section of cicatrix of bone.	One unrecorded	1
Staphyloraphy	One not relieved; one cured	2

OPERATION.	RESULT.	TOTAL.
Tenotomy.	Two well; one relieved; one in Hospital; one died of tetanus, to relieve which the operation was done; three unrecorded	8
Testicle removed.	Four unrecorded; one dead of peritonitis . .	5
Tracheotomy.	Eight well (two for croup, two for œdema of glottis-sucidal, one œdema of glottis, one for acute laryngitis); seven dead (five of croup); two unrecorded	17
Trephining.	Eight dead; (two with compound comminuted fracture with depression, dead of pyæmia; one for fracture with compression, autopsy showed fracture at the base of the brain; one for compound comminuted fracture of skull with depression, died of shock); four well (one for a compound depressed fracture, with laceration of the dura mater, complicated by a hernia cerebri; one for punctured wound of skull, without compression; one compound depressed fracture into frontal sinus); one in Hospital	13
Tumor cheloid	Two well	2
Tumor, cystic	One well	1
Tumor, encephaloid.	One well; two in Hospital; two relieved; two unrecorded	7
Tumor, enchondroma.	One in hospital	1
Tumor encysted.	Four well; one unrecorded	5
Tumor, epithelial.	Eleven well (one of abdomen, four of lip, one of wrist, one of heel, one of neck); one relieved; one in Hospital; two unrecorded	15
Tumor, fatty.	Seven well	7
Tumor, fibrous	Two well; two dead	4
Tumor, fibro-cartilaginous.	Two well	2

OPERATION.	RESULT.	TOTAL.
Tumor, fibro-nucleated.	Two well	2
Tumor, fibro-plastic.	One (of labia) well	1
Tumor, glandular.	Ten well (one leucocythemic); two relieved; one unrecorded	13
Tumor, melanotic.	Two unrecorded	2
Tumor, osteoid.	Two well	2
Tumor, painful subcutaneous.	One well	1
Tumor, parotid.	One well	1
Tumor, scirrhus.	Two well; one relieved	3
Tumor, thyroid.	One of thirteen months' duration, the size of a pullet's egg, well	1
Ununited fracture.	Two well (one tibia, one radius and ulna); one dead of pyæmia; one femur, well	4
Urethra, stricture of.	Two dilated by Holt's dilator, well	2
Varicocele.	One well	1
Varix ligature of.	Eighteen well; five relieved, one remaining in Hospital	24
Vein, external iliac, ligature of.	One	1
Vesico vaginal fistula.	One well; one much relieved; one not relieved; one unrecorded	4
	Total Number	1,113

SURGICAL DISEASES OF OUT-PATIENTS.

Abscess	259	Chancroids	4
axillary	6	Concussion	9
of back	1	Condyloma	1
cold	1	Contraction from burn	8
of elbows	1	Contusions	536
facial	4	Corns	3
of finger	4	Curvature of spine, angular	59
of foot	2	lateral	24
gluteal	2	Cysts	4
ischio-rectal	1	mucous of lip	1
of jaw	5	Cystitis	2
mammary	22	Deformity of chest	1
of neck	19	Deviated septum nasi	6
palmar	65	Dislocation, acromial end of clavicle	8
parotid	8	costal cartilage	2
periphrenitic	1	fingers	8
popliteal	6	thumbs	5
of scalp	9	old of thumbs	10
Adenitis	152	radius and ulna	8
Adhesion of cheek to gum	1	ulna	1
Anchylosis	19	shoulder joint	18
false	13	sternal end of clavicle	5
Aneurism innominate	1	old	52
popliteal	1	of hip	3
Anthrax	16	patellæ	2
Aphthæ	1	Dropsy of antrum	2
Arthritis	5	Enlarged glands	34
Bites	15	prostate	5
Blister	1	tonsils	11
Bronchocele	3	tarsal bones	2
Bubo	4	Enchondroma	1
Burns	54	Epithelial disease of lip	2
Bursæ	28	Epididymitis	9
Calculus vesical	2	Epistaxis	6
Cancer	2	Epulis	1
Cancrum oris	3	Erysipelas	24
Caries	6	Excoriations	3
Cephalæmatoma	2	Fistula in ano	11
Chancre	4		

Fistula in œsophago	3
in perinæo	1
Fissure of soft palate	2
Flat-foot	1
Foreign body in arm	7
cheek	2
ear	1
eye	11
foot	5
hand	31
leg	3
œsophagus (2 doubtful)	4
Fracture, skull	5
ossa nasi	2
jaw	8
clavicle	91
" with dislocation of elbow	1
costal cartilage	1
humerus	37
radius	50
ulna	54
" with dislocation of elbow	1
radius and ulna	46
elbow joint	4
wrist	1
metacarpal bones	17
fingers	32
ribs	15
femur	2
patella	1
metatarsal bones	2
toe	3
old	47
Frost-bite	11
Furunculus	27
Ganglion	14
Glossitis	7
Gonorrhœa	2
Hæmatocele	12
Hemorrhoids	27
Hare-lip, double	1
single	6
Hernia	73
umbilical	1
inguinal	2
double	1
House-maid's knee	14
Hydrocele	31
of cord	5
encysted of testes	1
double	3
Hydrocephalus	2
Hygroma	6
Hypochondriasis	4
Hypopium	1
Imperforate anus	1
Inflammation of hands, etc.	15
Ingrowing toenail	20
Irregular circulation in head	1
Irritable stump	21
Laceration of fingers	24
Laryngitis	1
Leucocythemia	5
Leucorrhœa	1
Lupus	4
Lumbago	2
Malformations	13
Mollities ossium	1
Morbus coxarius	90
Myalgia	1
Nævus	8
Necrosis	111
Neurosis	7
Nipple, inflammation of	3
Node of sternum	1
Odontalgia	1,050
Onychia	21
Orchitis	27
Ostitis	1
Otalgia	22
Otitis	16

Otorrhœa	27
Ozæna	15
Paralysis	29
Paraphymosis	6
Paronychia	204
Perineum, laceration of	1
Periostitis	25
Pernio	1
Pharyngitis	1
Phlebitis	5
Phlegmon	1
Phlegmasia alba dolens	1
Phymosis	14
Polypus nasi	12
Punctured wounds	1
Prolapsus ani	2
uteri	2
Rachitis	2
Ranula	6
Retention of urine	1
Rhagades	3
Rheumatic arthritis	40
Rough theca	1
Sciatica	5
Scrofulous disease of shoulder	1
elbow	1
wrist	2
knee	31
ankle	8
Scrotum, œdema of	1
Sinus	10
Spermatorrhœa	6
Spina bifida	1
Sprains	512
Stricture of œsophagus	1
urethra	7
Stomatitis	3
Synovitis, acute	22
chronic	28
Syphilophobia	2
Talipes	25
Tongue-tied	13
Tonsillitis	50
Tumors	24
cheloid	2
encephaloid (1 of ear)	3
encysted (1 of lip)	28
epithelial	19
fatty	11
fibro-cellular	3
fibrous	7
glandular	32
mammary	5
scirrhus	4
vascular	8
Ulceration of cartilage	1
colon	1
mucous membrane of nose	1
gums	4
not specified	34
nates	1
rectum	1
Ulcers, chronic	208
syphilitic	1
varicose	130
Undescended testicles	1
Uvula elongated	1
Vagina, laceration of	1
Varicocele	3
Varix	59
Venereal	219
Verrucæ	8
Wounds incised, lacerated and punctured	497
Wounds gunshot,	8
scalp	11
Wen	11
Weakness of female urethra	2
Wrist-drop	1
Wry neck	5
Total	8,095

OPERATIONS UPON SURGICAL OUT-PATIENTS.

Abscess	168	Imperforate anus	1
of jaw	1	Introduction of seton	2
mammary	10	Ligature of radial	1
of neck	20	Nævus, ligature of	1
palmar	38	injection of	1
parotid	5	Nares, plugged	1
of scalp	3	Necrosis	18
Amputation of fingers	114	Onychia	1
thumbs	1	Onychogryphosis	10
toes	2	Paraphymosis	7
Anchylosis	4	Paronychia	139
Anthrax	10	Phymosis	7
Bubo	4	Polypus nasi	12
Bursa	15	Ranula	2
Cysts	1	Retention of urine	6
Deformity of lip	1	Scrofulous glands	7
Deviated septum	2	Suppurating glands	13
Dislocations	17	Separation of fingers	3
of shoulder	3	Sinus	2
thumb	2	Spina bifida	1
hip	1	Talipes	10
patella	1	Tongue-tied	7
Epistaxis	1	Tonsillotomy	17
Epulis	1	Tumors, colloid	1
Excision of metacarpal bone	1	encysted	32
Extraction of bullet	1	epithelial	5
Fistula in ano	1	fatty	7
Foreign bodies extracted	61	fibrous	2
Furunculus	12	fibro-cellular	2
Gums, lancing of	1	mammary	1
Hemorrhoids	1	vascular	1
Hæmatocele	2	Verruca	1
Harelip	4	Wen	12
Hydrocele	19	Wounds, incised and lacer'd	172
double	1		
Hygroma	1	Total	1,062

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